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ABSTRACT

In this study, data were collected from 163 Instruction and Research (I&R) Units from 45 elementary multiunit schools (MUS) in 12 different states to determine the relationships between I&R unit effectiveness and unit member compatibility, unit leader's behavior, and the level of task structure as perceived by the unit members. The instrument developed and used for the survey consisted of questionnaires to be completed by unit members on their background, their unit leader's behavior, the operation of their I&R unit, and their perception of task structure and of themselves. The major conclusions of the study were that: (a) only leader behavior significantly influenced I&R unit effectiveness; (b) there is no significant relationship between I&R unit effectiveness and the number of unit members; and (c) there is no significant relationship between unit effectiveness and the number of hours per week which the unit meets. Several factors limit the study: (a) the consideration of only intragroup variables, (b) the varability of the selection process, (c) the sample selection process, and (d) the assumption that data collected reflect truthfulness in the subjects' responses. (Author/HMD)

Technical Report No. 298

AN ANALYSIS OF THE RELATIONSHIP BETWEEN THE EFFECTIVENESS OF THE MULTIUNIT ELEMENTARY SCHOOL'S INSTRUCTION AND RESEARCH UNIT AND INTERPERSONAL BEHAVIORS

by Nancy A. Evers

Report from the Project on Organization
for Instruction and Administrative Arrangements

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STATEMENT OF FOCUS

Individually Guided Education (IGE) is a new comprehensive system of elementary education. The following components of the IGE system are in varying stages of development and implementation: a new organization for instruction and related administrative arrangements; a model of instructional programing for the individual student; and curriculum components in prereading, reading, mathematics, motivation, and environmental education. The development of other curriculum components, of a system for managing instruction by computer, and of instructional strategies is needed to complete the system. Continuing programmatic research is required to provide a sound knowledge base for the components under development and for improved second generation components. Finally, systematic implementation is essential so that the products will function properly in the IGE schools.

The Center plans and carries out the research, development, and implementation components of its IGE program in this sequence: (1) identify the needs and delimit the component problem area; (2) assess the possible constraints--financial resources and availability of staff; (3) formulate general plans and specific procedures for solving the problems; (4) secure and allocate human and material resources to carry out the plans; (5) provide for effective communication among personnel and efficient management of activities and resources; and (6) evaluate the effectiveness of each activity and its contribution to the total program and correct any difficulties through feedback mechanisms and appropriate management techniques.

A self-renewing system of elementary education is projected in each participating elementary school, i.e., one which is less dependent on external sources for direction and is more responsive to the needs of the children attending each particular school. In the IGE schools, Center-developed and other curriculum products compatible with the Center's instructional programing model will lead to higher morale and job satisfaction among educational personnel. Each developmental product makes its unique contribution to IGE as it is implemented in the schools. The various research components add to the knowledge of Center practitioners, developers, and theorists.

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INTRODUCTION

As schools attempt to respond to new societal demands for individualization and humanization, they have begun to implement innovative educational programs which call for significant changes in organizational plans. One such innovative organizational plan is the multiunit elementary school, the school organizational component of a comprehensive educational system known as Individually Guided Education (IGE) developed at the Wisconsin Research and Development Center for Cognitive Learning and cooperating educational agencies.[1] The multiunit organizational plan consists of interrelated groups at various hierarchical levels of operation: the Instruction and Research Unit (I & R unit), the Instructional Improvement Committee (IIC), and the Systemwide Policy Committee (SPC). This organizational plan incorporates concepts of differentiated staffing, team teaching, and shared decision making.[2]

The multiunit plan requires teachers to work in small groups called I & R units which were designed to encourage interpersonal interaction

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[1]Herbert J. Klausmeier, Mary R. Quilling, Juanita S. Sorenson, Russell S. Way, and George R. Glasrud, Individually Guided Education and the Multiunit Elementary School: Guidelines for Implementation, (Madison, Wisconsin: Wisconsin Research and Development Center for Cognitive Learning, 1971).

[2]Ibid., p. 20.

and face-to-face discussion among teachers.[3] Moving from the age-graded, self-contained classroom organization to the multiunit organizational pattern where teachers work together in teams and share in team decision making represents a significant change for the teacher. A question reflecting a very practical concern arises when implementing the multiunit organization: What factors should be considered in staffing an I & R unit in order for it to perform effectively? This question represents the thrust of the research presented herein.

Much advancement has occurred in the developing of science and technology; comparatively, less progress has been made in understanding group behavior. Studies from the military, industry, and government have generated insights and perspectives on group organizations and processes, but conclusive insights about group phenomena in the field of education are relatively scarce.[4]

Background of the Study

Individually Guided Education in the Multiunit Elementary School (IGE/MUS-E) is a system which was developed through the cooperative efforts of the Wisconsin Research and Development Center for Cognitive Learning (hereafter referred to as the R and D Center) and cooperating educational agencies. IGE is defined as "a comprehensive system of education and instruction designed to produce higher educational

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[3] Ibid.

[4] H. A. Thelen, Education and the Human Quest, (New York: Harper & Row, 1960).

achievements through providing well for differences among students in rate of learning, learning style, and other characteristics."[5] The IGE system is composed of seven components (Appendix A), one of which is the multiunit school organizational pattern designed to facilitate individual learning.[6]

The organizational structure of the multiunit elementary school is designed to provide for open communication among school personnel, educational and instructional decision making at the appropriate levels, and accountability by educational personnel at all levels.[7] Figure 1 shows the prototypic organization of a multiunit elementary school. The organizational hierarchy of the multiunit school consists of interrelated groups at three levels of operation: the Instruction and Research Unit (I & R unit) at the building level, the Instructional Improvement Committee (IIC) at the building level, and the Systemwide Policy Committee (SPC) at the district level. Even though the prototypic organizational model indicates that an I & R unit is composed of students, intern(s) or student teacher(s), aide(s), and teachers, one of whom is the unit leader, the literature describing the functions of the I & R unit refers to the responsibilities of the team of professional teachers. Therefore, the term I & R unit will herein be used to refer only to the team of professional teachers including the unit leader.

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[5] Klausmeier, et al., Individually Guided Education, op. cit., p. 17.

[6] Ibid.

[7] Ibid.

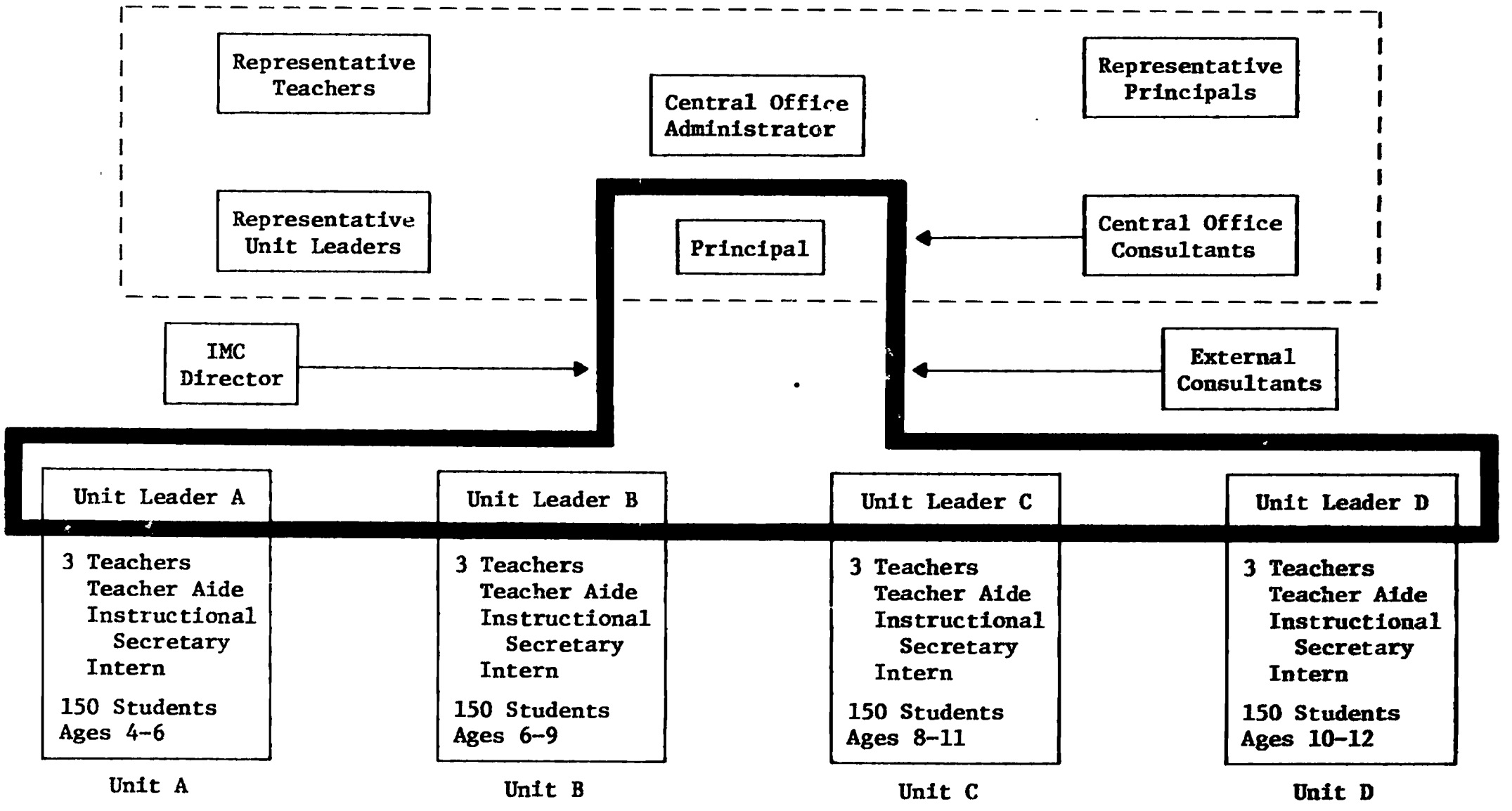

Figure 1. Organizational Chart of a Multiunit School of 600 Students.

Source: Klausmeier, et al., Individually Guided Education and the Multiunit Elementary School: Guidelines for Implementation, p. 21.

The main function of an I & R unit is to plan, carry out, and evaluate, as a team, the instructional programs for children assigned to the unit. Each I & R unit is to engage in a continuous on-the-job staff development program, cooperatively plan and conduct research, and be involved in preservice education.[8] Specific performance objectives have been developed for I & R units by the R and D Center. These performance objectives are in the areas of instructional programing, organizational operations, staff development, and school-community relations.[9]

The role of the staff teacher in the multiunit school is one of planning with other members of the I & R unit, working with many children in various grouping patterns, and performing professional duties of participating in group decision making, developing research activities, and developing learning programs. The teacher is involved in developing and clarifying instructional objectives, designing and implementing a program based on the assessment of each child, and continuously evaluating student progress.[10]

Unlike some differentiated staffing programs that create a complex hierarchy and call for new roles for personnel, the multiunit school establishes only one new position, the unit leader. The unit leader has responsibilities as a member of the IIC, as a leader of an I & R unit, and as a teacher. As a member of the IIC, the unit leader helps

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[8]Ibid., pp. 20-22.

[9]Ibid., pp. 91-126.

[10]Ibid., pp. 41-42.

plan and develop the instructional program of the entire school. The unit leader is a liaison between the IIC and the I & R unit staff. He/she is responsible for taking the initiative to plan and coordinate the instructional programs of the I & R unit and for coordinating the efficient utilization of the I & R unit's resources.[11]

Despite the development of the prototypic organizational model and other aspects of the IGE system and despite the development of the set of performance objectives to serve as guidelines for implementing IGE/MUS-E, it has been demonstrated through descriptive research that there exists considerable variance among I & R units in attaining the R and D Center's specifically stated performance objectives.

Pellegrin conducted a study in 1967-68 in which data were collected in a control school and a multiunit school in each of three Wisconsin school systems. He found that among the three multiunit schools, all of which were in their first year of implementation, there was "considerable variation in structure, policies, and practices" and that there was variation among I & R units in "interdependence relationships," a term used to refer to work-related patterns of interaction between people.[12]

In the 1971 report of the development and evaluation of the multiunit elementary school, the Wisconsin R and D Center reported observations of I & R units similar to those made by Pellegrin. There was

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[11] Ibid., pp. 37-41.

[12] Roland J. Pellegrin, Some Organizational Characteristics of Multiunit Schools, Working Paper No. 22, (Madison, Wisconsin: Wisconsin Research and Development Center for Cognitive Learning, 1969).

substantial variability among I & R units. Some I & R units had ineffective unit leaders and some had uncooperative staff teachers.[13]

During the 1971-72 school year, Ironside conducted a process evaluation of the nationwide installation of IGE. He found many variations among I & R units with regard to the extent to which they met the performance objectives related to meetings, inservice education, and instructional procedures.[14] It was noted that the frequency of these variations "defines a pervasive lack of uniformity in the way unit operations were conducted within as well as across MUSE/IGE schools."[15]

These studies represent the only available empirical evidence of the operational characteristics of I & R units. The observations made in these studies have raised questions regarding the effectiveness of I & R units in achieving the performance objectives. No systematic attempt has yet been made to empirically determine the factors which significantly relate to I & R unit effectiveness.

Research and literature dealing with small group behavior suggest a variety of factors which may influence small group effectiveness. A great amount of information has been amassed through empirical investigations

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[13]Herbert J. Klausmeier, Mary R. Quilling, and Juanita S. Sorenson, The Development and Evaluation of the Multiunit Elementary School, 1966-70, Technical Report No. 158, (Madison, Wisconsin: Wisconsin Research and Development Center for Cognitive Learning, 1971), p. 9.

[14]Roderick A. Ironside, The 1971-72 Nationwide Installation of the Multiunit/IGE Model for Elementary Schools: A Process Evaluation, (Durham, North Carolina: Educational Testing Service, September, 1972), pp. 129-131.

[15]Ibid., p. 131.

in the field of group dynamics; however, theoretical integration of this information is practically nonexistent. A need exists at present for an adequate theory for the organization of data.[16] A few theoretical formulations have been set forth, but these theories are capable of encompassing only limited amounts of the information gathered from small group research. Available data reveal the great complexity of small group behavior.

Shaw has organized variables which influence group process into four environments. He stated that groups are embedded in a complex environmental setting that influences almost every aspect of group process. He regarded this setting as several environments rather than a single one: (1) the physical environment--territoriality, personal space, spatial arrangements, and patterns of communication; (2) the personal environment--personal characteristics of group members; (3) the social environment--interpersonal relationships; and (4) the task environment--the group's task or set of tasks.[17]

Previous studies in organizational contexts similar to that conceptualized for the multiunit elementary school have indicated the possibility that group effectiveness can be influenced by group member compatibility, the leader's behavior, and the task structure.

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[16]Dorwin Cartwright and Alvin Zander, Group Dynamics: Research and Theory, (New York: Harper & Row, 1960), p. 47.

[17]Marvin E. Shaw, Group Dynamics: The Psychology of Small Group Behavior, (New York: McGraw-Hill, 1971).

In order to test the theoretical model, specific variables which have some demonstrated relationship to group effectiveness were selected from the four stated group environments for investigation. Two variables were selected from the physical environment: (1) group size, and (2) time. One variable was selected from the personal environment, individualized group member training. Two variables were selected from the social environment: (1) group member compatibility, and (2) leader behavior. One variable was selected from the task environment, the degree of task structure. Due to the demonstrated relationship of these variables and effectiveness and the hypothesized interrelationships of these variables, it is apparent that investigation of these variables and their effects on group effectiveness is needed. If the degree of compatibility, the unit leader's leader behavior, and the degree of task structure were demonstrated to be related directly to I & R unit effectiveness, it might be concluded that I & R unit effectiveness could be improved.

Statement of the Problem

The purpose of the study was to determine the interrelationships of I & R unit effectiveness to (1) I & R unit member compatibility, (2) the unit leader's leadership behavior, and (3) the level of task structure as perceived by I & R unit members. A sample of 163 I & R units from 45 multiunit elementary schools participated in the study. The teachers and unit leader of each I & R unit provided data relative to I & R unit effectiveness, their fundamental interpersonal relations orientation, and

task structure, and the unit leader's leadership behavior was described by the teachers in his/her I & R unit.

Theoretical Model

The theoretical model for this study is adapted from the framework suggested by Shaw and from selected aspects of social systems theory; FIRO: Fundamental Interpersonal Relations Orientation Theory;[18] and Path-Goal Theory of Leadership.[19] An illustration of this model is shown in Figure 2. The model is constructed from four environments whose relationships appear critical to small group effectiveness.

The environments are: the physical environment, the personal environment, the social environment, and the task environment. Even though many aspects of the physical environment may influence group behavior, relatively few of them have been examined systematically. Those aspects of the physical environment which have been studied enough to permit conclusions to be drawn about their effects on group behavior are: territoriality, personal space, spatial arrangements, patterns of communication channels, and group size.[20] The characteristics of the individuals

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[18]William C. Schutz, The Interpersonal Under-World, a reprint of FIRO: A Three Dimensional Theory of Interpersonal Behavior, (Palo Alto, California: Science and Behavior Books, 1970).

[19]Robert J. House and Gary Dessler, "The Path-Goal Theory of Leadership: Some Post Hoc and A Priori Tests," (paper presented at The Second Leadership Symposium: Contingency Approaches to Leadership, Southern Illinois University, Carbondale, Illinois, 1973).

[20]Shaw, Group Dynamics, op. cit., pp. 117-148.

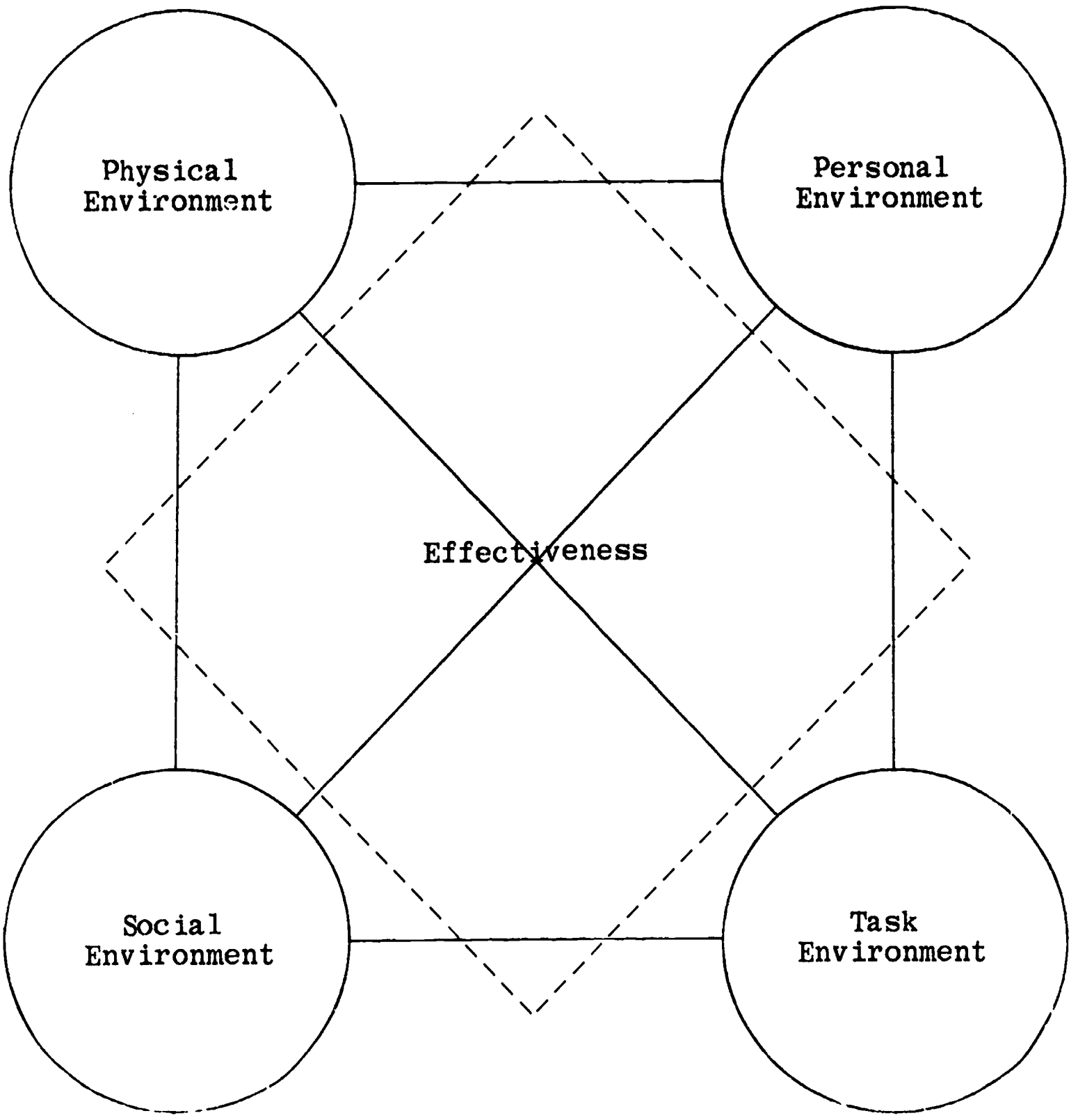

Figure 2. Small Group Effectiveness Model.

in the group constitute a personal environment in which the group operates. Studies which have investigated the effects of group member personal attributes can be classified into three interrelated categories: biographical characteristics, abilities, and personality traits.[21] The social environment has been studied in two basic contexts, group composition and group structure. Researchers investigating the effects of group composition on group behavior are concerned with the relationships among the personal characteristics of group members and the consequences of these relationships for group functioning. Researchers have utilized varied approaches in studying such aspects of group composition as cohesiveness, compatibility, and heterogeneity-homogeneity of group membership. Differentiations occur among group members such that inequalities exist among them along many dimensions; it is these differentiations which serve as the basis for the formation of group structure. The aspects of group structure which have been studied extensively are statuses, roles, norms, social power, and leadership.[22] It has been demonstrated that the characteristics of the task may be expected to exert a strong influence upon group behavior. Empirical evidence concerning the consequences of task environment for group functioning reveals a rudimentary beginning in research on group tasks.[23]

Small group effectiveness is a function of the interrelationships of the personal environment, the physical environment, the social environment,

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[21] Ibid., pp. 155-180.

[22] Ibid., pp. 181-275.

[23] Ibid., pp. 289-322.

and the task environment or, Eff = f(PE ± PhyE ± SE ± TE). The underlying assumptions of the model are: (1) the four stated group environments do in fact exist; (2) the four stated group environments are related; and (3) group effectiveness is a result of many factors.

Social Systems Theory

Parsons developed a theoretical framework for the investigation of social systems and later applied it to the educational setting.[24] Getzels and Guba[25] and Getzels, Lipham, and Campbell[26] applied social system theory to educational administration. Figure 3 represents the social system model which illustrates social behavior as a function of the social system in which the individual operates. Social behavior is a function of the personality of the individual and the role within the institution in which the individual functions or, B = f(R x P).[27]

The model is appropriate when attempting to explain the relationship between the institutional expectations for the I & R unit and the personality dispositions of the individuals involved within the social environment. The relationship is illustrated through two dimensions

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[24]Talcott Parsons, "Some Ingredients of a General Theory of Formal Organization," in Administrative Theory In Education, Andrew Halpin, ed., (New York: Macmillan, 1967), pp. 40-72.

[25]Jacob Getzels and Egon Guba, "Social Behavior and the Administrative Process," School Review, 65 (Winter, 1957), 423-441.

[26]Jacob Getzels, James M. Lipham, and Roald F. Campbell, Educational Administration As A Social Process, (New York: Harper & Row, 1968)..

[27]Ibid., p. 80.

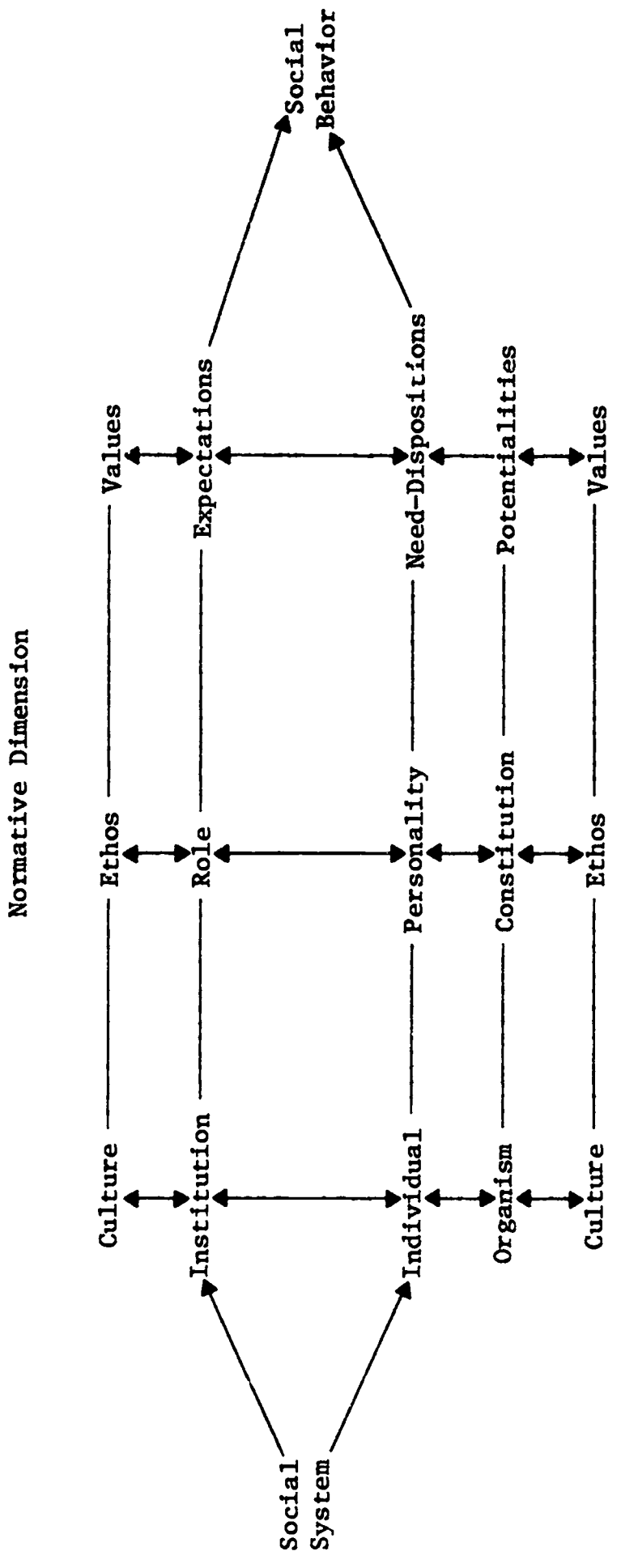

Figure 3. General Model of the Major Dimensions of Behavior in a Social System

Source: Jacob W. Getzels, James M. Lipham, and Roald F. Campbell, Educational Administration as a Social Process (New York: Harper and Row, 1968), p. 105.

of the model--the normative or institutional dimension, and the idiographic or personal dimension. The normative dimension is composed of the institutional roles and role expectations. The idiographic dimension of a social system is composed of individual personalities and their need-dispositions.[28]

For the purpose of this study, the I & R unit was the focal social system. The normative dimension of the I & R unit contains constituent roles and their accompanying expectations.[29] The I & R unit also contains an idiographic dimension composed of individuals, their personalities, and their need-dispositions. Effectiveness is a measure of the concordance of the role behavior and the role expectations. Effectiveness is a function of the congruence of behavior and expectations.[30]

Schutz developed a theory of interpersonal behavior called FIRO (Fundamental Interpersonal Relations Orientation) which arises out of a psychoanalytic orientation. The title of the theory signifies the basic idea that "every person orients himself in characteristic ways toward other people, and the basic belief that knowledge of these orientations allows for considerable understanding of individual behavior and the interaction of people."[31] Schutz explained characteristic ways in which a person orients himself/herself toward others in terms of three

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[28]Ibid., pp. 52-78.

[29]Klausmeier, et al., Individually Guided Education, loc. cit.

[30]Ibid., p. 127.

[31]William C. Schutz, The Interpersonal Under-World, op. cit., p. vii.

interpersonal needs: inclusion, control, and affection. In other words, he said, "People need people." Another aspect of the theory, simply stated, is "People need people to receive from and to give to." Schutz identified these as "wanted behavior" and "expressed behavior."[32] It is maintained that the needs of inclusion, control, and affection are present during childhood, and the characteristic interaction pattern that each person develops with respect to each need area is a result of the way the child was treated by his/her parents and other adults and of the way the child responded to them. The way a person orients himself/herself to others is a major determinant of interpersonal behavior.[33]

The interpersonal need for inclusion is defined behaviorally as a need to establish and maintain a satisfactory relation with people. The need manifests itself through behaviors aimed to attract the attention and interests of others. On the level of feelings, inclusion is defined as the need to create a feeling of mutual interest with others. In relationship to self-concept, the need for inclusion is the need to feel the self is worthwhile and significant.[34]

The interpersonal need for control refers to the decision-making process between people. It is defined behaviorally as the need to establish and maintain a satisfying relation with people with respect to control and power. With regard to feelings, the need for control

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[32] Ibid., p. 1.

[33] Ibid., pp. 34-56.

[34] Ibid., p. 18.

is defined as a need to create a feeling of mutual respect for the competence and responsibility of others. In perceiving self, one needs to see himself/herself as competent and responsible.[35]

The interpersonal need for affection refers to close personal and emotional feelings. It is defined behaviorally as the need to establish and maintain satisfactory relations with others with respect to love and affection. At the feeling level the need for affection is the need to create a feeling of mutual affection with others. At the level of self-concept, the need for affection is the need to feel that the self is lovable.[36]

The central concept used in the theoretical explanation of the interaction of the individuals is "compatibility."

Compatibility

Schutz defined compatibility as "a property of a relation between two or more persons, between an individual and a role, or between an individual and a task situation, that leads to mutual satisfaction of interpersonal needs and harmonious coexistence."[37] This definition of compatibility does not imply liking. It is possible that liking and compatibility are linked, but it is rather simple to recognize people who work well together without liking each other and people who like

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[35]Ibid., pp. 18-19.

[36]Ibid., p. 19.

[37]Ibid., pp. 105-106.

each other but do not work effectively together.[38] Schutz postulated that if the compatibility of one group, X, is greater than that of another group, Y, then the goal achievement of X will exceed that of Y.[39]

Schutz identified three types of compatibility that could occur in each of the need areas of inclusion, control, and affection: interchange compatibility, originator compatibility, and reciprocal compatibility.[40] Interchange compatibility is based on the mutual expression of inclusion, control, and affection. Interchange compatibility exists when two interacting people desire a similar amount of exchange.[41] Originator compatibility is derived from the originator-receiver dimension of interaction. It is based on differences in tendencies to originate or initiate behavior. Two people are compatible to the degree that the other person wishes to receive in each need area.[42] Reciprocal compatibility is based on reciprocal need satisfaction.[43]

Leadership

Leadership, "the performance of those acts which influence group

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[38] Ibid., p. 106.

[39] Ibid., p. 105.

[40] Ibid., p. 107.

[41] Ibid., pp. 110-112.

[42] Ibid., pp. 108-110.

[43] Ibid., pp. 107-108,

activities toward goal setting and goal achievement,"[44] is one of the key issues associated with group structure. Gouldner wrote that one reason for our society to be interested in the phenonemon of leadership stems from seeking for a remedy to social conflict.[45] Leadership has long been the concern of social psychology. It has been studied extensively and with a variety of research techniques.

The early studies of leadership were of a psychological orientation. These studies focused on the personality characteristics or traits which made a person a leader. The trait approach centered its attention on the leader as an isolated entity without considering the situation in which the leadership occurred. The trait approach yielded little, and often confusing, results.[46] Bird's 1940 study pointed out how disappointing the trait approach was. He was able to form a list of traits which differentiated leaders from non-leaders. However, the disappointing fact was that only five percent of the "discovered" traits were common to four or more investigations.[47] Stogdill[48]

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[44]J. S. Bruner and R. Taguiri, "Perception of People," in Gardner Lindzey (ed.), Handbook of Social Psychology, (Reading, Massachusetts: Addison-Wesley, 1954), pp. 634-655.

[45]Alvin W. Gouldner, ed., Studies in Leadership, (New York: Harper & Row, 1950).

[46]Shaw, Group Dynamics, op. cit., p. 269.

[47]C. Bird, Social Psychology, (New York: Appleton-Century, 1949).

[48]Ralph M. Stogdill, "Personal Factors Associated With Leadership: A Survey of the Literature," Journal of Psychology, 45, (1948), 35-71.

and Mann[49] both documented in their literature surveys the fact that the trait approach offered confusing information to the study of groups. More recently Stogdill has stated that experimental evidence clearly supports the view that personality is an important factor in leadership and that the nature of the situation also determines leadership in some degree.[50]

A significant break from the traitist approach was marked by the work of Lewin and his colleagues who turned attention to the "social climates" created by differing styles of leadership: authoritarian, democratic, or laissez-faire.[51] This work led toward differential contexts of leadership, which evolved into the situational approach. Hemphill's Situational Factors in Leadership, published in 1949, further marked the departure from a trait approach to a situational approach.[52]

In the early 1950's, there was a great amount of research conducted to investigate the continuity in leadership across situations.[53] The

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[49]R. D. Mann, "A Review of the Relationship Between Personality and Performance in Small Groups," Psychological Bulletin, 56, (July, 1959), 241-270.

[50]Ralph M. Stogdill, "The Trait Approach To The Study Of Educational Leadership," in Luvern L. Cunningham and William J. Gephart, ed., Leadership: The Science and the Art Today, (Itasca, Illinois: F. E. Peacock, 1973), p. 100.

[51]K. Lewin, R. Lippitt, and R. K. White, "Patterns of Aggressive Behavior in Experimentally Created 'Social Climates,'" Journal of Social Psychology, 10, (Bulletin, 1939), 271-299.

[52]J. K. Hemphill, Situational Factors in Leadership, (Columbus, Ohio: Ohio State University, Bureau of Business Research, 1949).

[53]Edwin P. Hollander and James W. Julian, "Contemporary Trends in the Analysis of Leadership Processes," Psychological Bulletin, 71, (May, 1969), 387-397.

findings of Gibb, Carter and Nixon, and Carter, Hawthorne, Meirowitz, and Lanzetta supported the idea that who became a leader depended upon the task.[54] Laboratory experimentation tended to disregard personality variables. McGrath and Altman found in their review of small group research that only 16 out of 250 studies used personality as one of the variables.[55]

In surveying the literature of the 1960's, it can be found that another contrast in the approach to studying leadership was formed. Interest in leadership was directed to social processes of interaction and exchange. Lipham identified the behavioral approach to the study of leadership as the approach which recognizes that both psychological and sociological factors are potent behavioral determinants. He described this approach as utilizing both types of factors, thereby focusing upon the behavior of the leader in the situation.[56] In 1969 Hollander and Julian identified the contemporary trend to be attaching greater significance to the interrelationship between the leader, the followers, and the situation as evidenced in the works of Fiedler, Hollander, and Steiner.[57]

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[54]Ibid.

[55]E. McGrath and I. Altman, Small Group Research, (New York: Holt, Rinehart, & Winston, 1966).

[56]James M. Lipham, "Leadership: General Theory and Research," in Luvern L. Cunningham and William J. Gephart, eds., Leadership: The Science and the Art Today, (Itasca, Illinois: F. E. Peacock, 1973), p. 4.

[57]Hollander and Julian, "Contemporary Trends in the Analysis of Leadership Process," op. cit., pp. 387-397.

Two major behavioral dimensions that have emerged from leadership research are initiating structure and consideration. Leader initiating structure is used to describe the degree to which the leader initiates psychological structure for subordinates by doing such things as assigning tasks, specifying procedures to be followed, clarifying his expectations of subordinates, and scheduling work to be done. Leader consideration is used to describe the degree to which the leader creates a supportive environment of psychological support by doing such things as being friendly and approachable, looking out for the personal welfare of the group, doing little things for subordinates, and giving advanced notice of change.[58]

Filley and House found that leaders who initiate structure for subordinates are generally rated highly by superordinates and have higher producing work groups than leaders who are low on initiating structure; and that leaders who are considerate of subordinates have more satisfied employees.[59] Fleishman and Harris found initiating structure to be a source of grievances and turnover.[60] However, Hemphill, Mass, and Vroom and Mann found employees in large groups to prefer initiating structure

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[58]Abraham K. Korman, "Consideration, Initiating Structure And Organizational Criteria--A Review," Personnel Psychology, 19, (Winter, 1966), 349-361.

[59]Allen C. Filley and Robert J. House, Managerial Process and Organizational Behavior, (Glenview, Illinois: Scott Foresman, 1969).

[60]Edwin A. Fleishman and Edwin F. Harris, "Patterns of Leadership Behavior Related to Employee Grievances and Turnover," Personnel Psychology, 15, (Spring, 1962), 43-56.

more than employees in small groups.[61] Oaklander and Fleishman found initiating structure to be negatively correlated with intergroup conflict.[62] Recent studies have demonstrated that among high-level employees, initiating structure is positively related to satisfaction, performance, and perceptions of organizational effectiveness, but negatively related to role conflict and ambiguity.[63]

House has presented the Path-Goal Theory of Leadership in an attempt to reconcile and integrate the conflicting results of earlier studies of leader behavior.[64] He identified two propositions of the theory: (1) one of the strategic functions of the leader is to enhance the psychological states of subordinates that result in motivation to perform or in satisfaction with the job, and (2) the specific leader behavior that will accomplish the motivational function of leadership is determined by the situation in which the leader operates.[65] House conducted studies using a validated measure of task structure and measures of leader behavior and subordinate expectancies developed factor analytically to test the theory. The findings provide support for the theory.

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[61]Robert J. House, "A Path-Goal Theory of Leader Effectiveness," in Readings In Organizational Behavior And Human Performance, E. E. Scott, Jr., and L. L. Cummings, eds., (Homewood, Illinois: Richard D. Irwin, 1973), p. 486.

[62]Ibid.

[63]Ibid.

[64]House and Dessler, "The Path-Goal Theory of Leadership," op. cit.

[65]Ibid., pp. 3-9.

House derived three perceived leader behavior scales. These factors were labelled instrumental leadership, supportive leadership, and participative leadership. The instrumental and supportive leadership factors consist primarily of items taken from Form XII of the Ohio State Leader Behavior Description Questionnaire (LBDQ), and the participative leadership factor consists of items developed by House and items from the LBDQ Consideration Scale that reflect participative leadership.[66] It was found that the correlations between instrumental leader behavior and subordinate satisfaction and expectancies decrease as subordinate task structure increases and the correlations between supportive leader behavior and these dependent variables increase as task structure increases. The findings support the conclusion that supportive leadership is primarily a determinant of social-psychological maintenance under highly structured task conditions while instrumental leadership is primarily a determinant of expectancies under relatively unstructured task conditions.[67]

Mott conducted a study which is analogous to a test of the path-goal theory and provides an inferential basis upon which to assess the validity of the theory. He correlated several measures of supervisory behavior with measures of division effectiveness under various levels of task structure and task interdependence in two organizations. The correlations between measures of leader behavior and organizational

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[66] Ibid., p. 27.

[67] Ibid., p. i.

effectiveness were moderated by task structure. It was found that when task structure was medium or low virtually every measure of leader behavior was significantly related to organizational effectiveness. When task structure was high the relationships were lower and generally insignificant.[68]

The ability of the theory to reconcile and integrate earlier findings, together with the support derived from studies testing hypotheses related to the theory, suggests that the theory demonstrates promise and calls for further testing with more direct measurement of the theoretical constructs using experimental and correlationship methods.[69]

Task Structure

The task of a group is intimately related to the group goal; the group members will be motivated to work toward task completion to the extent that task completion will move the group toward its goal. The task is what must be done in order for the group to achieve its goal or subgoal.[70] Hackman proposed a similar formulation of task by stating that a task must always include identifiable stimulus materials and instructions about what to do about this material.[71]

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[68]Ibid., p. 14.

[69]House, "A Path-Goal Theory of Leader Effectiveness," op. cit., p. 499.

[70]Shaw, Group Dynamics, op. cit., p. 300.

[71]J. R. Hackman, "Toward Understanding the Role of Tasks in Behavioral Research," Acta Psychologica, 31, (August, 1969), 113.

Dessler conducted a study to test the Path-Goal Theory of Leadership in which it was hypothesized that task structure would have a negative moderating effect on the relationship between instrumental leader behavior and several dependent variables and that the task structure would have a positive moderating effect on the relationship between supportive leader behavior and several dependent variables.[72] Dessler said that a task is highly unstructured when task stimuli and instructions are complex, non-repetitive, and ambiguous.[73] Conversely, a task is highly structured when task stimuli and instructions are simple, repetitive, and clear.

Effectiveness

The general framework for measuring effectiveness was derived from the output variables presented in Hage's Axiomatic Theory of Organizations.[74] Hage identified eight variables which compose the formal characteristics of organizations, four of which were organizational ends. Even though the variables were selected on an ad hoc basis, Parsons, Bales, and their associates gave them support as a result of their studies.[75] The four measures and their indicators developed by Hage are: production (effectiveness)--equivalent to their goal achievement;

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[72]House and Dessler, "The Path-Goal Theory of Leadership," op. cit., pp. 22-23.

[73]Ibid.

[74]J. Hage, "An Axiomatic Theory of Organizations," Administrative Quarterly, 10, (December, 1965), 289-320.

[75]Ibid.

efficiency (cost)--equivalent to their integration; job satisfaction (morale)--equivalent to their tension management; adaptiveness (flexibility)--equivalent to their adaptation.[76]

Price defined effectiveness as "the degree of goal achievement."[77] Similarly, Getzels, Lipham, and Campbell defined effectiveness as "a measure of the concordance of the role behavior and the role expectations."[78] For purposes of this study, effectiveness is defined as the degree of goal achievement.

In summary, a general theoretical model which consists of the four group environments that research findings have indicated to be critical to the effectiveness of small groups was developed and presented. The four group environments were: the physical environment, the personal environment, the social environment, and the task environment. Specific variables from each of these environments were selected for analysis in this study. The model attempted integration of the research findings in the domain of group dynamics. The utility of the model lies in its providing a means whereby the interrelations of group environments and small group effectiveness could be tested.

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[76]Ibid.

[77]James L. Price, Organizational Effectiveness: An Inventory of Propositions, (Homewood, Illinois: Richard R. Irwin, 1968), pp. 2-3.

[78]Getzels, Lipham, and Campbell, Educational Administration As A Social Process, op. cit., p. 129.

Statement of the Hypotheses

The basic hypothesis tested in this study was:

There is no significant relationship between I & R unit effectiveness and the interrelationships of:

(1) I & R unit member compatibility,

(2) the unit leader's instrumental leader, supportive leader, and participative leader behavior, and

(3) the level of task structure as perceived by I & R unit members.

The ancillary hypotheses tested were:

(1) There is no significant relationship between I & R unit effectiveness and the number of I & R unit members.

(2) There is no significant relationship between I & R unit effectiveness and the number of hours the I & R unit meets per week.

(3) There is no significant relationship between I & R unit effectiveness and the percentage of the I & R unit members who participated in staff development activities for school staff as described in the IGE/MUS-E implementation strategy.

Limitations of the Study

There were five significant limitations of this study. First, the scope of the study was limited to intragroup variables, only those variables characteristically within the small group; structural variables outside of the small group were not included. Second, the study was limited by the variable selection process. The variables in this study

were selected by the researcher from among numerous variables mentioned by others who have investigated small group effectiveness. Third, the study was limited by the sample selection criteria: (1) the entire school was organized into the multiunit pattern; (2) the Instructional Programing Model was being applied to at least one curricular area; (3) the school had an active IIC which met at least once a week; (4) the school had multiage grouping in each of the I & R units; (5) the school implemented this mode of organizational operation no earlier than the fall of 1971 and no later than the fall of 1972. Fourth, the study was limited by the fact that causality cannot be inferred from any relationship found in the study. Fifth, the study was limited by the fact that all results of the study are predicated on the assumption that the data reflect truthfulness in the subjects' responses.

Overview of the Study

This chapter presented the nature of the study, the background of the study, the statement of the problem, the development of a theoretical model for describing the factors which interact to influence small group effectiveness, the statement of the hypotheses, and the limitations of the study. Chapter II includes a description of the study's design and methodology. Chapter III provides a description of the data analysis. Chapter IV presents a summary of the study, findings, conclusions, and implications for further research and practice.

CHAPTER II

DESIGN AND METHODOLOGY

This chapter describes the methodology of the study and the statistical design for analyzing the data. The chapter is composed of four sections which present the development of the survey instruments, a definition of the study population and a description of the procedures for sample selection, a description of the data collection procedure, and the statistical techniques employed in analyzing the data.

Description of the Survey Instrument

In Chapter I, small group effectiveness was theorized to be dependent upon the interrelated effects of group member compatibility, leader behavior, and task structure. The instrument developed and adapted for this study consisted of five parts: Preface--"Background Data;" Section I--"FIRO-B" (the Fundamental Interpersonal Relations Orientation-Behavior Questionnaire); Section II--"I & R Unit Operations Questionnaire;" Section III--"Task Structure;" Section IV--"Unit Leader Behavior Description." Each of the sections was introduced with the directions necessary to insure proper response procedures. In addition, a cover sheet communicated the study's intent to the respondents (see Appendix B).

The teachers and unit leader of each unit were asked to respond to different sections of the instrument. The individuals with the sections to which each responded were presented in Table 1. An X in the table

indicates the sections which individuals in each respondent category were requested to complete.

TABLE 1

INSTRUMENT SECTIONS AND RESPONDENT CATEGORIES

Respondent	Background Data	FIRO-B	I & R Unit Operations	Task Structure	Unit Leader Behavior Description
Teachers	X	X	X	X	X
Unit Leaders	X	X	X	X	

Background Data

As a preface to the other four sections, personal and situational questions elicited facts from unit leaders and teachers. Included in this brief section were questions to determine job classification, professional experience and preparation, attendance at multiunit school conferences, amount of time spent in I & R unit meetings per week, and the number of professional staff members in the I & R unit.

The background section of the instrument was accepted as having face validity. The selected items were included on the basis of their descriptive value to the study. Responses to these situational and personal questions indicated that this part of the instrument was unambiguous and extracted the desired information.

FIRO-B

FIRO-B (Fundamental Interpersonal Relations Orientation-Behavior) was used to measure I & R unit member compatibility.[1] Permission to use FIRO-B was granted to the investigator by Consulting Psychologists Press (see Appendix C). The purposes of FIRO-B are: (1) to measure how an individual acts in interpersonal situations, and (2) to predict interaction between people. FIRO-B is unique in that it not only measures individual characteristics, but also serves as a means to predict relations between people. FIRO-B is designed to measure the behavior the individual expresses toward others (e) and how the individual wants others to behave toward him/her (w). The fit between the expressed behaviors and wanted behaviors for groups of people gives information about compatible relationships.[2]

According to Schutz's theory, presented in Chapter I, there are three interpersonal needs: Inclusion (I), Control (C), and Affection (A). FIRO-B is designed to measure a person's behavior toward others (e) and the behavior he/she wants from others (w) in these three areas of interpersonal interaction. The measure yields six scores: expressed inclusion behavior (e^I), wanted inclusion behavior (w^I), expressed control behavior (e^C), wanted contr . behavior (w^C), expressed affection behavior (e^A), and wanted affection behavior (w^A).[3]

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[1]Schutz, op. cit., pp. 57-80.

[2]Ibid., p. 58.

[3]Ibid.

The content validity of FIRO-B was determined by demonstrating how well the content of the test sampled the class of situations or the subject matter about which conclusions were to be drawn. All of the FIRO-B scales are Guttman scales. If the theory underlying the use of Guttman scales is accepted, then content validity is a property of all legitimate scales.[4] The concurrent validity of FIRO-B has been verified in practical and experimental settings by showing how well test scores correspond to measures of concurrent criterion performances or status.[5] Investigations cited by Schutz have evaluated the predictive validity of FIRO-B by showing how well predictions made from the test were confirmed by gathered evidence.[6]

The reliability of FIRO-B was determined by both a coefficient of internal consistency and a coefficient of stability for each of the six subscales. The coefficients of internal consistency, which indicate the degree to which the test items measured the same thing, were all above .93 for 1543 respondents for each of the scales.[7] These coefficients are all well above the .90 which Guttman set as the minimum necessary for a series of items to be regarded as approximately a perfect scale.[8] The

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[4]L. Guttman, "The Basis for Scalogram Analysis," in S. A. Stouffer, et al., Measurement and Prediction (Princeton, New Jersey: Princeton University Press, 1950), pp. 60-90.

[5]Schutz, op. cit., pp. 66-67.

[6]Ibid., pp. 66-67.

[7]Ibid., pp. 77-80.

[8]Guttman, loc. cit.

coefficient of stability, which is the degree to which respondent measures remained unchanged on a test-retest with a month's time lapse, exceed .71 for each of the subscales. The mean coefficient of the six scales was .76.[9]

Schutz defined three types of compatibility and described a method of combining them to obtain a summary measure. The types of compatibility can be understood by considering Figure 4.

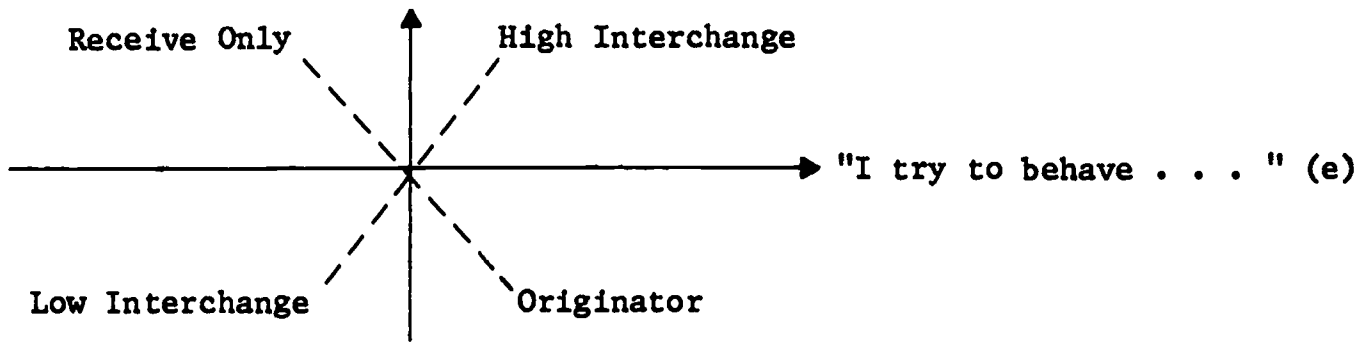

Figure 4. General Schema for Interpersonal Behavior Measured by FIRO-B.

Source: W. C. Schutz, The Interpersonal World, (A reprint edition of FIRO: A Three-Dimensional Theory of Interpersonal Behavior, Science & Behavior Books, Palo Alto, California, 1970), p. 107.

Two types of compatibility can be explained by considering the diagonals of the diagram. The high-interchange quadrant represents those who prefer a great deal of exchange of the "commodity" (e.g., interaction,

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[9] Schutz, op. cit.

power, love) relevant to the area. The low-interchange quadrant represents those who prefer to avoid exchange of the appropriate commodity, those who neither initiate nor want to receive inclusion, control, or affection. To be compatible, two people should be similar with respect to the interchange variable. Compatibility based on similarity along this diagonal is identified as interchange compatibility, symbolized as $_{x}K^{10}$.

In the three need areas, interchange compatibility means:

1. In the area of inclusion, people must agree on how involved they like to become with other persons, varying from always with others to always alone.

2. In the area of control, people must agree on how much of an authority structure they will operate under, varying from entirely structured to entirely unstructured.

3. In the area of affection, people must agree on the same degree of closeness of personal feelings, of expression of confidences, and so forth, varying from close and intimate to very cool and distant.[11]

Interchange incompatibility arises when members of the dyad disagree on the amount of interchange in a certain area of interpersonal relations.

1. In inclusion, the conflict is between the joiner and participator who always likes to do things "together" (high interchange) and the withdrawn person who prefers to be by himself (low interchange). The introvert-extravert distinction is relevant here. ($_{x}K^{I}$)

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[10] Ibid., pp. 106-107.

[11] Ibid., p. 111.

2. In control, the conflict is between the conformist and the rebel. The one who wants to follow the rules from above and enforce the rules below (high interchange), with the one who wants to do neither (low interchange). The former is very much like the authoritarian, while the latter resembles the anarchist. (xK^C)

3. In affection, the conflict is between the affectionate, expressive person who likes others to be the same (high interchange) and the more reserved, distant individual who prefers that others keep their emotional distance (low interchange). It occurs when one person likes to be personal, intimate, and confiding, while the other does not want to discuss personal matters. (xK^A)[12]

Interchange compatibility may be indicated quantitatively by having e_i and e_j represent the score on the expressed behavior ("I try to act toward others") for one individual (i) and the other individual (j) in the dyad; and w_i and w_j, the score of the behavior wanted from others ("I like people to act toward me . . . "), for the two members of the dyad.

Since the more similar two individuals' scores are on the diagonal the more compatible they are, interchange compatibility in each need area is measured by subtracting the combined scores of how one person (i) likes to be acted toward (w_i) and how he/she likes to act toward others (e_i), i.e., ($e_i + w_i$) by the combined scores of the other person's e_j and w_{jj}, i.e., ($e_j + w_j$). The absolute value of the difference is sufficient, because the direction of the difference is not important. Thus, the interchange compatibility score for two people, i and j, is given for each need area by

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[12]Ibid.

$$xK_{ij}^{I} = \left|(e_i^{I} + w_i^{I}) - (e_j^{I} + w_j^{I})\right|$$

$$xK_{ij}^{C} = \left|(e_i^{C} + w_i^{C}) - (e_j^{C} + w_j^{C})\right|$$

$$xK_{ij}^{A} = \left|(e_i^{A} + w_i^{A}) - (e_j^{A} + w_j^{A})\right|$$

The smaller the discrepancy between each pair of scores is interpreted to indicate the greater the interchange compatibility.[13]

The other diagonal ranges from those who desire only to initiate or to originate behavior to those who wish only to receive it. In order to be compatible along this diagonal, two people should complement each other; they should be equidistant from the center in opposite directions. Compatibility based on complementarity along this diagonal is identified as originator compatibility, symbolized as oK.[14]

Originator compatibility in each of the three need areas occurs when:

1. People who very actively initiate group activities work [well] with those who want to be included in such activities (inclusion).

2. Those who wish to dominate and control the activities of others work [well] with those who want to be controlled (control).

3. Those who wish to give affection work [well] with those who want to receive affection (affection).[15]

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[13] Ibid., pp. 111-112.

[14] Ibid., p. 107.

[15] Ibid., p. 109.

Originator incompatibility arises when there is disagreement regarding preference of who shall originate relations and who shall receive them. There are two types of originator conflict for each of the three need areas: between two originators, competitive originator incompatibility, and between two receivers, apathetic originator incompatibility.

1. In the inclusion area, the competitive conflict is between two persons each of whom wants to "select his own company." Each wants only to join the activities he wishes but not to have others join him. The apathetic conflict is between two persons; both want to be included, but neither will act to join the other. (oK^I)

2. In the control area, the competitive conflict is between two persons each of whom wants to be dominant and run the activities but does not want to be told what to do. This situation is exemplified by the familiar power struggle. The apathetic conflict in this area is between two submissive people each of whom wants to be told what to do but neither of whom will take the initiative in doing it. This situation arises with a boss who cannot make decisions and an employee with no "initiative." (oK^C)

3. In the affection area, the competitive conflict is between two who desire to originate close relations but not to receive them. An example is the Don Juan for whom pursuit is an end in itself and reciprocation is threatening. The apathetic conflict is between two who want to be liked but do not want to initiate it. An example is the two coworkers secretly fond of each other but neither ever initiating a personal relation. (oK^A)[16]

Originator compatibility is measured by obtaining a score for each individual which expresses his/her degree of preference for initiating and

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[16]Ibid.

not receiving. The simplest measure of this preference is the difference between the expressed and wanted behaviors in a given need area, that is $(e_i - w_i)$. Highest originator compatibility occurs when the two individuals' scores are complementary. Complementarity of two scores is measured by adding the two originator scores of the dyad. Thus, the originator compatibility score for two people, i and j, is given for each need areas by

$$oK_{ij}^{I} = (e_i^{I} - w_i^{I}) + (e_j^{I} - w_j^{I})$$

$$oK_{ij}^{C} = (e_i^{I} - w_i^{I}) + (e_j^{C} - w_j^{C})$$

$$oK_{ij}^{A} = (e_i^{A} - w_i^{A}) + (e_j^{A} - w_j^{A})$$

If the sum of the scores has the same value with opposite signs, their scores will add to zero and are said to be exactly complementary. If the sum of the scores is positive, both persons prefer to originate rather than receive, indicating competitive incompatibility. If the sum of the scores is negative, both prefer receiving, indicating apathetic incompatibility. For the computation of originator compatibility, the sign is retained to indicate competitive or apathetic types of incompatibility.[17]

A third measure of compatibility is derived from the major axes rather than the diagonals and is identified as reciprocal compatibility, symbolized as rK. Reciprocal compatibility is based on the assumption

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[17] Ibid., p. 110.

that the expressed behavior of one person must equal the wanted behavior of the other person.

Reciprocal compatibility is a measure of how well two people will satisfy each other's needs. A measure of mutual need satisfaction is determined by comparing i's description of how he/she likes to be acted toward (w_i) with j's description of how he/she likes to act toward people (e_j), and similarly between w_j and e_j. Thus, the reciprocal compatibility score for two people, i and j, is given for each of the need areas by

$$rK_{ij}^{I} = \left| e_i^{I} - w_j^{I} \right| + \left| e_j^{I} - w_i^{I} \right|$$

$$rK_{ij}^{C} = \left| e_i^{C} - w_j^{C} \right| + \left| e_j^{C} - w_j^{C} \right|$$

$$rK_{ij}^{A} = \left| e_i^{A} - w_j^{A} \right| + \left| e_j^{A} - w_i^{A} \right|$$

Absolute measures are used, because the main concern is with the size rather than with the direction of the differences. The smaller the discrepancy between each pair of scores, the better will each person satisfy the needs of the other.[18]

In the formulation of the formulas for the three types of compatibility two details should be noted: (1) the subscript ij denoting individuals will customarily be understood to apply to each compatibility symbol, and will always be omitted except where the meaning is unclear; (2) since for each measure of compatibility a low score means high compatibility, the formulas actually give a direct measure of incompatibility. Therefore,

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[18] Ibid., p. 108.

when the scores obtained from these formulas were utilized for multiple correlational analyses, the inverse relationship existent between scores and compatibility was corrected by subtracting the scores from 18, the maximum score possible for each of the formulas.[19]

The methods for computing compatibility thus far presented are for dyadic combinations. One of the problems of this study was to compute group compatibility scores. Schutz referred to this problem briefly when he stated, "For larger groups a measure of dispersion is used to assess compatibility."[20] This reference provided insufficient information to serve as a solution to the problem. In order to compute compatibility scores for groups consisting of two or more people, the following formulas for each of the three types of compatibility were developed:

$$xK = \frac{\sum_{i=1}^{n-1} \sum_{j=i+1}^{n} \left| e_i - e_j + w_i - w_j \right|}{\frac{n^2 - n}{2}}$$

$$oK = \frac{\sum_{i=1}^{n} (e_i - w_i)}{\frac{n}{2}}$$

$$rK = \frac{\sum_{i=1}^{n-1} \sum_{j=i+1}^{n} \left| e_i - w_j \right| + \left| e_j - w_i \right|}{\frac{n^2 - n}{2}}$$

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[19] Ibid., p. 113.

[20] Ibid., p. 112.

Composite measures of compatibility may be obtained across the need areas and types of compatibility. For example, all measures of compatibility in the inclusion area may be combined to obtain a general measure of inclusion compatibility which is symbolized as K^I and is computed with the following formula:

$$K^I = \Sigma \left[\left| rK^I \right| + \left| oK^I \right| + \left| xK^I \right| \right]$$

The other type of combination produces a measure for each type of compatibility over all need areas. For example, all measures of the originator compatibility may be combined to obtain a general measure of originator compatibility which is symbolized as oK and is computed with the following formula:

$$oK = \Sigma \left[\left| oK^I \right| + \left| oK^C \right| + \left| oK^A \right| \right]$$

To summarize all types of compatibility and their relations to one another, they are presented in the matrix shown in Table 2. The sum of rows defines rK, oK, and xK, while the sum of columns defines K^I, K^C, and K^A. Both the sum of rows and the sum of columns add to K, which is total compatibility. Although K is a mathematically equivalent to the sum of either the compatibility type or the area compatibility, the definition of K has psychological differences when viewed as the sum of one or the other and should be interpreted accordingly.[21]

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[21] Ibid., p. 115.

TABLE 2

RELATIONS BETWEEN COMPATIBILITY MEASURES

		Areas of Compatibility K K K	Row Sums
TYPES OF	r	rK^I rK^C rK^A	
COMPATI-	o	oK^I oK^C oK^A	
BILITY	x	xK^I xK^C xK^A	
Column Sums		$_IK^I$ $_CK^C$ $_AK^A$	K Total

Source: W. C. Schutz, The Interpersonal World, (A reprint edition of FIRO: A Three-Dimensional Theory of Interpersonal Behavior, Science & Behavior Books, Palo Alto, California, 1970), p. 115.

I & R Unit Operations Questionnaire

The I & R unit Operations Questionnaire section provided data for determining the quantitative measure of I & R unit effectiveness, the dependent variable. It consists of fifty-one items which were developed from a list of performance objectives identified as the responsibility of the I & R unit.[22] The fifty-one items were arranged in the four categories presented in the performance objectives: Instructional Program,

[22]Klausmeier, et al., op. cit., pp. 91-126.

Staff Development, Organizational Operations, and School-Community Relations. The unit leader and teachers of each I & R unit independently rated the degree to which their I & R unit achieved each of the performance objectives. A five-point scale, consisting of categories ranging from very effectively to very ineffectively, was selected for respondent rating of each item.

The I & R Unit Operations Questionnaire was accepted as having content validity. The content validity was determined before the questionnaire was piloted. A six-member jury consisting of IGE researchers, practitioners, and evaluators was asked to judge the questionnaire in terms of clarity, content, item construction, and the correspondence of items to the performance objectives delineated for I & R units.[23]

The reliability of the I & R Unit Operations Questionnaire was obtained through the pilot study and later in the main study. In the pilot study 109 teachers and unit leaders from 6 Wisconsin IGE schools, meeting the same criteria as the main study's sample schools, were asked to complete the questionnaire. PROGRAM TSTAT,[24] a computer program written by the Wisconsin Information Systems for Education, calculated an alpha coefficient for an assessment of reliability. The levels of internal consistency for each of the four categories and for the total fifty-one items derived from the pilot study and from the main study items are presented in Table 3.

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[23] Ibid.

[24] Dennis W. Spuck, PROGRAM TSTAT, (Madison, Wisconsin: University of Wisconsin, Wisconsin Information Systems for Education, 1971).

TABLE 3

RELIABILITY LEVELS FOR THE I & R UNIT OPERATIONS QUESTIONNAIRE

Categories	Pilot Study N=109	Main Study N=673
Instructional Program	.9081	.9329
Staff Development	.8035	.8209
Organizational Operations	.9077	.9283
School-Community Relations	.7885	.7885
Total	.9498	.9589

Spuck[25] has indicated that alpha coefficients below .50 are of questionable reliability; those between .50 and .70 have sufficient reliability for early stages of research; and those above .70 have a high degree of reliability. The reliability levels obtained for this questionnaire exceeded the level Spuck considered adequate with regard to an instrument's internal consistency.

A factor analysis of the fifty-one items was performed for two reasons: (1) to determine if the categories of Instructional Program, Organizational Operations, Staff Development, and School-Community Relations were appropriate constructs for the fifty-one items to be classified among, and (2) to determine the scales to be utilized in testing the

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[25]Dennis W. Spuck, Technical Report: Item Analysis And Reliability Assessment Of School Sentiment Index, (Madison, Wisconsin: University of Wisconsin, 1971).

major hypothesis. Factor analysis is the statistical method by which the instrument's construct validity can be identified. The principal components analysis is used for determining the linear combination which accounts for the greatest variability in the population.[26] An intercorrelation matrix was obtained and analyzed to describe a reduced matrix of loadings on the major factors of leader behavior. This analysis was accomplished through the use of PROGRAM BIGFACT, a statistical program available from the Wisconsin Information Systems for Education.[27]

Task Structure

A modified form of the Task Structure scale developed by House and Dessler was used to measure the level of task structure as perceived by I & R unit members.[28] The scale consists of ten items designed to measure the degree to which the stimuli and execution rules and procedures are unambiguous, repetitive, and simple. The scale was found to have Kuder-Richardson formula 20 reliabilities of .69 and .65 in two separate samples. Findings indicate that the task scale has multimethod concurrent validity and is sufficiently discriminating.[29] Permission to

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[26]Maurice M. Tatsuoka and David V. Tiedeman, "Statistics as an Aspect of Scientific Method in Research on Teaching," in Handbook of Research On Teaching, W. L. Gage, ed., (Chicago, Illinois: Rand McNally & Co., 1963), p. 153.

[27]Dennis W. Spuck and Donald N. McIsaac, Jr., PROGRAM BIGFACT, (Madison, Wisconsin: The University of Wisconsin, Wisconsin Information Systems for Education, 1971).

[28]House and Dessler, op. cit., pp. 25-26.

[29]House and Dessler, op. cit.

use the Task Structure scale was granted to the investigator by House during a telephone conversation. While speaking with Dr. House, the investigator shared her concern regarding the reported low reliability levels and asked for any suggestions he may have for making modifications to the scale in order to raise its reliability. He suggested some item and format changes which were made by the investigator before the pilot study. The reliability of this section was determined using PROGRAM TSTAT and the responses from a pilot sample of 109 teachers and unit leaders from 6 Wisconsin IGE schools. An alpha coefficient of .7235 was obtained, which is considered adequate. A second reliability level was computed using the sample of the main study, and an alpha coefficient of .7538 was obtained.

A single task structure score for each unit was obtained by summing across all items of the scale for each unit member and then computing the mean score for the entire unit.

Unit Leader Behavior Description

The Unit Leader Behavior Description section consists of three leader behavior scales developed by House to measure instrumental leadership, supportive leadership, and participative leadership.[30] The teachers of each I & R unit responded to this section; the unit leaders did not respond to this section. This section of the instrument consisted of twenty-two items, and a five-point response scale was employed for each item. Permission to use the Leader Behavior scale with minor modifications was granted to the investigator by House.

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[30] Ibid., pp. 26-27.

House derived three perceived leader behavior scales from a pool of 35 items using a least squares solution in the common factor model. Three oblique factors were identified. Table 4 presents the factor loadings for the leader behavior items. These factors were labelled instrumental leadership, supportive leadership, and participative leadership.

TABLE 4

FACTOR LOADINGS OF LEADER BEHAVIOR ITEMS
(N=198)

Item	Factor Loadings I	II	III
Instrumental Leadership Items (IL)			
He lets group members know what is expected of them	.463	-.350	-.050
He decides what shall be done and how it shall be done	.831	.231	-.068
He makes sure that his part in the group is understood	.439	-.298	.053
He schedules the work to be done	.657	.267	.096
He maintains definite standards of performance	.767	.083	.167
He asks that group members follow standard rules and regulations	.629	-.001	-.008
He explains the way my tasks should be carried out	.465	-.180	.059

TABLE 4 (Continued)

Item	Factor Loadings I	II	III
Supportive Leadership Items (SL)			
He is friendly and approachable	-.100	-.766	.013
He does little things to make it pleasant to be a member of the group	-.025	-.969	-.232
He puts suggestions made by the group into operation	-.128	-.731	-.134
He treats all group members as his equals	-.317	-.993	.039
He gives advance notice of changes	-.064	-.662	.148
He keeps to himself	-.148	-.346	.228
He looks out for the personal welfare of group members	.127	-.650	.081
He is willing to make changes	.070	-.473	.227
He helps me overcome problems which stop me from carrying out my task	.232	-.456	.033
He helps me make working on my tasks more pleasant	.047	-.718	-.017
Responses: 5) Always, 4) Often, 3) Occasionally, 2) Seldom, 1) Never			
Participative Leadership Items (PL)			
When faced with a problem he consults with his subordinates	.110	.066	.771
Before making decisions he gives serious consideration to what his subordinates have to say	-.154	-.401	.618
He asks subordinates for their suggestions concerning how to carry out assignments	.125	.042	.675

TABLE 4 (Continued)

Item	Factor Loadings I	II	III
Before taking action he consults with his subordinates	.008	.103	.724
He asks subordinates for suggestions on what assignments should be made	-.014	.176	.551[31]

The instrumental leadership and supportive leadership factors consist primarily of items taken from the Leader Behavior Description Questionnaire-Form XII (LBDQ).[32] The instrumental leadership scale is similar to the Initiation of Structure dimension of the LBDQ-From XII, and the supportive leadership scale is similar to the Consideration dimension of the LBDQ-From XII. The participative leadership factor consists of items developed by House and items from the Ohio State University Consideration Scale that reflect participative leadership.[33]

The wording of the items from House's Leader Behavior scale was slightly modified. A sample item from the instrument read as follows:

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[31] Ibid.

[32] Ralph M. Stogdill, Manual For the Leader Behavior Description Questionnaire-Form XII, (Columbus, Ohio: The Ohio State University, Bureau of Business Research, 1963).

[33] E. A. Fleishman, "A Leader Behavior Description for Industry," in Leader Behavior: Its Description and Measurement, R. M. Stogdill and A. E. Coons, eds., (Columbus, Ohio: Bureau of Business Research, Ohio State University, 1957).

"He asks that group members follow standard rules and regulations." This was modified to read: "My unit leader asks that unit members follow standard rules and regulations." These alterations were deemed desirable in order to direct respondent attention specifically to the unit leader's behavior in the I & R unit. Each item was accompanied by a five-point, Likert-type scale for rating the unit leader's behavior in the I & R unit. The choices were: (5) "My unit leader always acts this way," (4) "My unit leader often acts this way," (3) "My unit leader occasionally acts this way," (2) "My unit leader seldom acts this way," and (1) "My unit leader never acts this way." Because the response scale was in qualitative terms, the five responses were quantified with a score of "5" for an "always" response, and at the other end of the scale, a score of "1" was for a "never" response.

The reliabilities of the three leader behavior scales were obtained twice, once in the pilot study and again in the main study. These reliabilities were also obtained using PROGRAM TSTAT. The levels of internal consistency for each scale derived from the pilot study and from the main study are presented in Table 5. The reliability levels obtained for these scales exceeded the level considered adequate with regard to an instrument's internal consistency.

TABLE 5

RELIABILITY LEVELS FOR THE INSTRUMENTAL LEADERSHIP SCALE, THE SUPPORTIVE LEADERSHIP SCALE, AND THE PARTICIPATIVE LEADERSHIP SCALE

Scale	Pilot Study N=86	Main Study N=510
Instrumental Leadership	.8247	.8011
Supportive Leadership	.9172	.9382
Participative Leadership	.9280	.9204

Population, Definition, and Sample Selection

The 1972-1973 IGE/Multiunit Elementary School Directory provides a complete listing of schools which are identified as having implemented IGE;[34] however, researchers conducting earlier studies in IGE schools have found that not all of the schools listed were implementing IGE. Therefore, a telephone survey to all the listed schools was conducted to identify those schools which meet the following minimal standards which the Wisconsin R and D Center has suggested: (1) the entire school is organized into the multiunit pattern; (2) the Instructional Programming Model is being applied to at least one curricular area; (3) the school has an active Instructional Improvement Committee (IIC) which

[34] 1972-1973 IGE/Multiunit Elementary School Directory, (Madison, Wisconsin: Wisconsin Research and Development Center for Cognitive Learning, 1973).

meets at least once a week; (4) the school has multiage grouping in each of the I & R units (see Appendix D).[35]

The population of IGE schools from which the study's sample was drawn was composed of those schools which met the minimal standards, which indicated through the phone survey an interest in participating in a study if randomly selected, and which implemented IGE no earlier than the fall of 1971 and no later than the fall of 1972. This specific time range for implementation of the program was selected because (1) the fall of 1971 marks the first time that the implementation in each school was accomplished through following the R and D Center's implementation strategy and using a common set of inservice materials, and (2) the schools had either one or two years of operation in this mode. PROGRAM IRANDX[36] was used to generate the random sample of fifty-five schools from the described population.

The names, addresses, and telephone numbers of the sample schools were obtained from the 1972-1973 IGE/Multiunit Elementary School Directory.[37] Each IGE State Coordinator with a school(s) in the selected sample was sent a letter providing them with a list of schools in their

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[35]Roderick A. Ironside, The 1971-72 Nationwide Installation of the Multiunit/IGE Model for Elementary Schools: A Process Evaluation. A study conducted under contract with the Office of Program Planning and Evaluation, U. S. Office of Education, Department of Health, Education, and Welfare, OE Contract Number 0-71-3705. (Durham, North Carolina: Educational Testing Service, September, 1972), Vol. I, p. 15.

[36]Dennis W. Spuck and Donald N. McIsaac, PROGRAM IRANDX, (unpublished paper, Madison, Wisconsin: University of Wisconsin, Wisconsin Information Systems for Education, 1971).

[37]1972-1973 IGE/Multiunit Elementary School Directory, op. cit.

state asked to participate and information regarding the study (see Appendix E). Contact was made by telephone with the principal of each sample school. Each principal was asked if his/her school would participate in the study, given the data collection directions, and told to contact the investigator if any questions concerning the study arose. A total of fifty schools from twelve states agreed to participate: four schools from California; four schools from Colorado; five schools from Connecticut; two schools from Illinois; four schools from Indiana; three schools from Massachusetts; three schools from Minnesota; one school from Nebraska; five schools from New Jersey; five schools from Ohio; five schools from South Carolina; and nine schools from Wisconsin. Those schools which elected not to participate did so because they felt the questionnaire would interfer with previously scheduled school activities. Ultimately, forty-five schools returned completed instruments. These 45 schools represent 90 percent of the 50 schools which agreed to participate. Within these forty-five schools were 163 I & R units all of which served as the unit of analysis for the study. A total of 163 unit leaders and 510 teachers responded to the questionnaire.

Procedures for Data Collection

Instruments were mailed to each of the sample schools in care of the school principal. A letter to the principal containing directions for distribution, collection, and return of the questionnaire, and a note to the teacher designee, containing directions for collecting and returning the completed instruments, were mailed with the instruments (see Appendix F). Each principal was instructed to hold a meeting with all

unit leaders and teachers in the school. Considering the time needed for the distribution of materials, the reading of directions, and the completion of the instrument, the meeting should have been approximately forty-five to sixty minutes in length. The principal distributed the instruments in individual envelopes to the teachers and unit leaders, directing each person to complete independently the instrument during the single session meeting, return the completed instrument to the envelope, seal the envelope, and hand the envelope to a designated teacher who was responsible for mailing all of the instruments to the investigator. A large postage paid envelope was provided to each school for the return of all instruments in a single mailing.

Instrument Summary and Statistical Techniques Employed

In summary, the described questionnaire, consisting of a preface and four sections, was employed. A description of each instrument, its validity and reliability, and its application to the study have been presented. In general, the tests in each section were designed to elicit perceptions of (1) interpersonal behavior as they relate to I & R unit member compatibility, (2) I & R unit effectiveness, (3) task structure, and (4) unit leader's leader behavior. The tests have been demonstrated to be appropriate and reliable measures of those perceptions.

The statistical method utilized to test the major hypothesis of the study was multiple regression as described by Kerlinger.[38] This

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[38]Fred N. Kerlinger, Foundations of Behavioral Research (2nd ed.; New York: Holt, Rinehart and Winston, 1973), pp. 603-656.

method provides a procedure to determine the strength of the relationship between the independent variables, which are I & R unit member compatibility, task structure, and the unit leader's instrumental, supportive, and participative leadership behavior, and the dependent variable, which is I & R unit effectiveness.

A stepwise regression procedure[39] was used to determine the relative contribution each of the independent variables made in explaining the dependent variable. This analysis was performed through the use of PROGRAM WISE*LIB.SETSTP,[40] a computer program available at the University of Wisconsin, Wisconsin Information Systems for Education. The program was processed on the Univac 1108 computer at the Madison Academic Computer Center (MACC) at the University of Wisconsin.

The relationship proposed in each of the ancillary hypotheses was tested using a Pearson product-moment correlation coefficient which provides a procedure and an index for testing the strength of the correlation between the two variables in each of the hypotheses. This analysis was performed through the use of PROGRAM WISE*STAT.DISTX,[41] a computer program available at the University of Wisconsin, Wisconsin Information Systems for Education. To test the statistical significance of the correlations, the .05 level of confidence was used.

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[39]Frederick P. Stofflet, PROGRAM WISE*LIB.SETSTP, (Madison, Wisconsin: The University of Wisconsin, Wisconsin Information Systems for Education, 1971).

[40]Ibid.

[41]Dennis W. Spuck, Frederick P. Stofflet, and David J. Fleckenstein, PROGRAM WISE*STAT.DISTX, (Madison, Wisconsin: The University of Wisconsin, Wisconsin Information Systems for Education, 1971).

CHAPTER III

ANALYSIS OF THE DATA

This chapter is composed of three sections. The first section consists of preliminary data analyses. The second section presents the results of the multiple regression analysis used to test the major hypothesis comparing I & R unit effectiveness and the interrelationship of: I & R unit member compatibility, task structure, and the unit leader's Instrumental Leadership behavior, Supportive Leadership behavior, and Participative Leadership behavior. The third section presents the results of the correlations used to test the ancillary hypotheses.

Preliminary Data Analyses

Before performing the actual tests of the stated hypotheses, three preliminary analyses of the data were made in order to: (1) determine the I & R unit member compatibility; (2) determine the major factors of I & R unit effectiveness; and (3) ascertain whether the assumptions underlying the use of a multiple linear regression analysis were fulfilled by the sample data.

I & R Unit Member Compatibility

According to Schutz's theory of interpersonal compatibility, I & R unit member compatibility (K) can be described in terms of a summary of

the interrelationship between compatibility in three need areas and three types of compatibility (see Table 2, Chapter II).

A summary measure for the level of compatibility among I & R unit members for each I & R unit was calculated through the following steps:

1. The nine compatibility subscales for each I & R unit were calculated according to the formulas presented in Chapter II.

2. Each compatibility subscale for each I & R units was subtracted from 18, the total possible score for each subscale, in order for the score to express a measure of compatibility rather than incompatibility.

3. The scores were entered on the matrix of compatibilities as shown below.

Types of Compatibility				
	rK^I	rK^C	rK^A	rK
	oK^I	oK^C	oK^A	oK
	xK^I	xK^C	xK^A	xK
Column Sums	K^I	K^C	K^A	K Total

4. The rows were summed to determine the level of compatibility for each type of compatibility.

5. The columns were summed to determine the level of compatibility in each need area.

6. The row sums were added together.

7. The column sums were added together.

8. The column sums were checked against the row sums

> for equality; equality reasonably assured the accuracy of the c ll scores.[1]

Since the I & R unit member compatibility level for each I & R unit was the statistic to be used in the test of the major hypothesis, a total I & R unit member compatibility (K) was obtained for each of the 163 I & R units.

Factor Analysis of the I & R Unit Operations Questionnaire

As indicated in Chapter II, a factor analysis of the I & R Unit Operations Questionnaire was performed through the use of PROGRAM BIGFACT in order to (1) determine if the categories of Instructional Program, Organizational Operations, Staff Development, and School-Community Relations were appropriate constructs for the fifty-one items to be classified among and (2) determine the scales to be utilized in testing the major hypothesis.

PROGRAM BIGFACT performed the factor analysis on the mean item scores obtained for each of the 163 I & R units. The computer program first produced the means and standard deviations of the fifty-one items across all units. These results appear in Table 6. Following the calculation of item means and standard deviations, the program produced a matrix of item intercorrelations.

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[1]Kenneth B. Smith, An Analysis of the Relationship Between Effectiveness of the Multiunit Elementary School's Instructional Improvement Committee and Interpersonal and Leader Behaviors, Technical Report No. 230, (Madison, Wisconsin: Wisconsin Research and Development Center for Cognitive Learning, University of Wisconsin-Madison, 1972), pp. 68-69.

TABLE 6

MEANS AND STANDARD DEVIATIONS OF
I & R UNIT OPERATIONS QUESTIONNAIRE ITEMS

Item Number	Mean	Standard Deviation	Item Number	Mean	Standard Deviation
1	1.953	.515	27	2.213	.906
2	2.141	.596	28	1.711	.607
3	2.052	.563	29	2.714	.885
4	1.995	.496	30	1.748	.581
5	2.254	.525	31	2.006	.656
6	2.085	.585	32	2.162	.715
7	2.605	.628	33	2.499	1.114
8	2.241	.554	34	3.027	1.101
9	2.006	.614	35	2.596	.876
10	1.973	.535	36	2.702	.851
11	1.824	.613	37	2.602	.821
12	2.587	.663	38	2.407	.829
13	2.182	.771	39	1.733	.585
14	2.025	.659	40	2.220	.716
15	2.502	.596	41	2.685	.792
16	2.546	.558	42	2.777	.767
17	2.547	.554	43	3.672	.997
18	2.579	.581	44	2.999	1.052
19	2.173	.701	45	2.276	.802
20	2.447	.724	46	2.748	.857
21	2.324	.854	47	2.537	.755
22	2.385	1.040	48	2.279	.775
23	2.514	1.005	49	1.750	.584
24	2.953	.982	50	2.161	.642
25	1.737	.669	51	2.353	.705
26	2.473	.981			

Principal component analysis was used to determine the factors. Principal component analysis extracts first that common factor accounting for the largest part of the variance in the correlation matrix and second, that factor, uncorrelated with the first, accounting for the largest part of the remaining variance, and so forth.[2] This procedure is referred to as extraction of eigenvalues from a correlation matrix. Since principal-component analysis extracts factors in the order of variance accounted for, the process can be terminated at any point desired, assuring that maximum variance is accounted for by the extracted factors.[3] A limit of six factors extracted was set. From the correlation matrix (R) PROGRAM BIGFACT performed a factor analysis and calculated the eigenvalues of R which are listed in Table 7 along with the percent of variance attributable to each.

The varimax orthogonal method of rotation was used in order to place the factors on a more objective basis and to have the resulting factors accounted for in terms of common variance. The correlation matrix was rotated in order to increase the strength of the relationship between the extracted factors and the items clustered around each principal factor. Table 8 presents the factor loadings for the I & R Unit Operations.

After the factors were located, they were interpreted and identified. Interpretation was based generally upon the items to which the

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[2]Kerlinger, op. cit., pp. 659-689.

[3]Spuck and McIsaac, op. cit., p. 3.

TABLE 7

EIGENVALUES OBTAINED FROM FACTOR ANALYSIS OF THE I & R UNIT OPERATIONS QUESTIONNAIRE ITEMS

Factor Number	Eigenvalue	Contribution to Variance	Percent of Variance
1	18.042	57.1	57.1
2	4.378	13.9	71.0
3	3.246	10.3	81.2
4	2.286	7.2	88.5
5	2.022	6.4	94.9
6	1.624	5.1	100.0

factors were strongly and weakly related. The fifty-one I & R Unit Operations Questionnaire items were arranged on the instrument according to the four categories presented in the performance objectives: items 1-18, Instructional Program; items 19-24, Staff Development; items 25-47, Organizational Operations, items 48-51, School-Community Relations.[4] The factor analysis of the items identified six factors. The first factor consisted of the items from Instructional Program, minus items 11, 13, 14, and 3 which later appeared in a group as the sixth factor. The second factor consisted of items 25-34 and items 37 and 36 from Organizational Operations; these items were identified as "procedural"

[4]Klausmeier, et al., loc. cit.

TABLE 8

FACTOR LOADINGS OF I & R UNIT OPERATIONS QUESTIONNAIRE ITEMS
(N=163)

Item Number	Item	Factor Loadings I	II	III	IV	V	VI	Identifying Factor
2	Develops and/or selects behavioral objectives related to the skill and concept outlines	-.512	.265	.314	.110	-.135	.354	I
1	Develops and/or selects outlines of skills and concepts to be learned which are appropriate to the student in the unit	-.513	.256	.236	.090	-.121	.428	I
6	Preassesses students for attainment of the objectives within the first month of implementing the Instructional Programing Model	-.523	.060	.114	.203	.095	.450	I
9	Uses a variety of student grouping patterns in the course of a particular curriculum such as (a) independent study, (b) one-to-one (teacher-student), (c) one-to-one (student-student), (d) small group (3-11 students), (e) medium group (12-19 students), (f) class-sized group (20-39 students), and (g) large group (more than 30 students)	-.558	.106	.433	-.000	-.214	.098	I

TABLE 8 (Continued)

Item Number	Item	Factor Loadings I	II	III	IV	V	VI	Identifying Factor
5	Specifies teacher activities needed for instruction	-.588	.128	.120	.384	-.052	.221	I
12	Conducts evaluation regarding the percentage of students who attain specific objectives	-.593	.163	-.019	.169	-.273	.343	I
4	Uses a variety of materials for each of the identified instructional objectives	-.676	.088	.330	.088	.089	.181	I
7	Preassesses students' motivational level, learning style, interest and attitudes, and special problems as soon after the preassessment of objectives attainment as the unit staff can conduct the assessment and utilize the results	-.692	.042	.026	.266	-.135	.064	I
8	Places students in initial groups in IGE curriculum areas based on preassessment results regarding achievement, learning style, motivational level, interest, or other relevant variable(s)	-.693	.025	-.037	.166	-.149	.195	I
15	Conducts evaluation regarding the effectiveness of the instructional materials currently in use	-.730	.213	.216	.165	-.220	.024	I

TABLE 8 (Continued)

Item Number	Item	Factor Loadings I	II	III	IV	V	IV	Identifying Factor
17	Conducts evaluation regarding the effectiveness of the assessment materials currently in use	-.781	.171	.153	-.017	-.250	.142	I
16	Conducts evaluation regarding the effectiveness of the instructional techniques currently in use	-.786	.157	.208	.137	-.248	.016	I
18	Conducts evaluation regarding the effectiveness of the assessment techniques currently in use	-.815	.141	.081	.037	-.241	.173	I
33	Keeps minutes of unit meetings	-.079	.815	-.144	.125	-.033	-.026	II
30	Has its unit meetings chaired by the unit leader	-.053	.790	.170	.158	.060	.260	II
31	Focuses discussion on agenda topics at unit meetings	-.211	.721	.167	.146	-.013	.124	II
29	Prepares and distributes an agenda to all personnel involved in the meeting prior to unit meeting time	-.136	.657	.040	.176	-.128	-.049	II
25	Schedules unit meetings regularly	-.034	.656	.276	.141	-.118	.292	II
34	Distributes minutes of unit meetings to total unit staff, the IIC, and others who attend unit meetings	-.174	.645	-.070	.131	-.049	-.115	II

TABLE 8 (Continued)

Item Number	Item	Factor Loadings I	II	III	IV	V	VI	Identifying Factor
28	Requires the unit leader, unit teachers, interns, and student teachers assigned to the unit to attend unit meetings	-.074	.642	.411	.023	-.196	.226	II
32	Has consultants, teachers, IMC director (librarian), aides, and others attend unit meetings at our request	-.156	.614	.402	.117	-.182	.068	II
27	Holds unit meetings during the regular staff working day	-.009	.507	.293	-.080	-.282	.302	II
26	Schedules at least two hours per week with one hour in a single block to plan for instruction	-.121	.418	.369	.318	-.306	.084	II
48	Identifies each student with a staff member for purposes of home-school relations, including conferences and home visits, as well as day-to-day guidance of the student and monitoring of his performance	-.181	.143	.814	.147	-.044	-.016	III
49	Reports individual students' progress to parents	-.271	.017	.634	.145	-.306	.029	III
50	Cooperates with the IIC in interpreting the IGE/MUS-E concept to parents and residents in the school attendance area	-.311	.243	.537	.165	-.297	.118	III

TABLE 8 (Continued)

Item Number	Item	Factor Loadings I	II	III	IV	V	VI	Identifying Factor
51	Cooperates with the IIC in utilizing volunteer community personnel (e.g., parents, other adults, high school and college students, and people with special expertise) in the instructional program and other school activities	-.312	.208	.483	.067	-.355	.020	III
41	Assesses each unit member's expertise in subject matter at least once per year	-.291	.175	.099	.795	-.008	-.084	IV
42	Assesses each unit member's expertise in instructing various sizes and kinds of groups at least once per year	-.304	.106	-.009	.732	-.179	-.015	IV
40	Evaluates the flexibility of the schedule at least once per quarter	-.247	.243	.336	.580	-.136	.069	IV
43	Provides at least five hours per week released time from instruction for the unit leader to plan, manage, study and conduct research	.042	.135	.082	.569	-.225	.151	IV
39	Holds meetings whenever necessary to deal with immediate problems	-.238	.187	.442	.537	-.098	.126	IV

TABLE 8 (Continued)

Item Number	Item	Factor Loadings I	II	III	IV	V	VI	Identifying Factor
38	Holds grouping and scheduling meetings at least once every two weeks	-.120	.317	.197	.523	-.219	.398	IV
45	Assigns aides (instructional and clerical) tasks according to broad guidelines established by the IIC and/or specific guidelines established by the unit	-.013	.057	.446	.515	-.003	.240	IV
46	Assigns each teacher a specialization in a curriculum area, or teaching styles to develop, so that he can act as a resource person to the unit	-.118	.248	.460	.485	-.133	-.059	IV
37	Holds meetings to evaluate instructional units, programs, and unit operations at least once per quarter	-.217	.487	.269	.464	-.356	.014	IV
44	Provides at least one hour per week released time from instruction for teachers to plan, study, and conduct research	.040	.074	.427	.452	-.178	.137	IV
36	Holds curriculum design meetings at least once per quarter	-.227	.477	.262	.432	-.398	-.050	IV
35	Holds goal-setting meetings at least once per semester	-.192	.407	.291	.415	-.391	.007	IV

TABLE 8 (Continued)

Item Number	Item	Factor Loadings I	II	III	IV	V	VI	Identifying Factor
47	Identifies each student in the unit with a teacher who monitors his progress during the year and takes initiative as required in the IGE subject-matter areas	-.174	.222	.725	.352	-.116	.052	IV
19	Participates in the school's staff development program as planned by the IIC	-.353	.290	.206	.106	-.567	.196	V
21	Participates in the evaluation of the intern-student-teacher program	-.217	.163	.127	.031	-.603	.099	V
20	Participates in the evaluation of the school's staff development plan	-.328	.342	.042	.088	-.647	.136	V
22	Meets together for at least three days prior to the opening of school to make immediate plans regarding student grouping patterns and scheduling for the first one to two weeks of school	-.153	-.126	.392	.234	-.695	-.045	V
24	Meets at least one day per semester when children are not at school to extend IGE planning into other curricular areas	-.074	.192	-.026	.234	-.709	.065	V

TABLE 8 (Continued)

Item Number	Item	Factor Loadings I	II	III	IV	V	VI	Identifying Factor
23	Meets together for at least three days prior to the opening of school to make long-range plans regarding our I & R unit's instructional design and goals for the entire year	-.224	-.126	.315	.217	-.726	-.066	V
11	Records assessment results in a usable form (e.g., on charts, McBee cards, lists, or individual folders)	-.363	-.073	.075	-.079	-.075	.754	VI
13	Regroups students at least every two to three weeks based on needs and attainment of objectives	-.305	.118	-.050	.110	-.089	.753	VI
14	Plans for all I & R unit teachers to teach in the IGE subject-matter areas	-.211	.329	-.087	.297	.002	.562	VI
10	Assesses students for attainment of objectives after instruction	-.556	.097	.125	-.105	-.070	.556	VI
3	Specifies materials, equipment, personnel, space and time needed for instruction	-.420	.022	.289	.224	-.030	.425	VI

matters for I & R unit meetings. After an inspection of the loadings in Table 8 revealed the loadings of items 37 and 36 on the second factor to appear nearly equivalent on the fourth factor, it was decided to place items 37 and 36 with the fourth factor where conceptually similar items loaded. The third factor consisted of all the items from School-Community Relations, plus item 47. Item 47 was placed with the fourth factor because the second highest factor loading for item 47 was on the fourth factor and an analysis of the item's wording indicated that the stem of the item was the same as the stem of the next item which had its highest factor loading on the third factor. The fourth factor consisted of items 35, 38-46 from Organizational Operations; these items were identified as "substantive" matters for I & R unit meetings. The fifth factor consisted of all the items from Staff Development.

From this analysis and synthesis of the loadings, generic names were determined and assigned to each factor. Factor I could be termed, "I & R Unit Instructional Program (I);" Factor II could be termed, "I & R Unit Organizational Operations (Procedural);" Factor III could be termed, "I & R Unit School-Community Relations;" Factor IV could be termed, "I & R Unit Organizational Operations (Substantive);" Factor V could be termed, "I & R Unit Staff Development;" and Factor VI could be termed, "I & R Unit Instructional Program (II)."

The constructs presented in the performance objectives and utilized for the instrument were generally validated with the exceptions of (1) Instructional Program being separated into two factors for which no conceptual difference could be identified, and (2) Organizational

Operations being separated into two factors, "procedural" and "substantive" matters. Based upon the results of the factor analysis, it was decided to use the following eight scales in testing the major hypothesis: I & R Unit Total Effectiveness; I & R Unit Instructional Program (I & II) Effectiveness; I & R Unit Instructional Program (I) Effectiveness; I & R Unit Instructional Program (II) Effectiveness; I & R Unit Organizational Operations (Procedural) Effectiveness; I & R Unit Organizational Operations (Substantive) Effectiveness; I & R Unit School-Community Relations Effectiveness; and I & R Unit Staff Development Effectiveness.

Multiple Regression Assumptions

After the independent variables in the major hypothesis were calculated and the dependent variable had been factor analyzed, an assessment of the sample data was made to determine whether the variables in the major hypothesis satisfied the criteria which help to provide the theoretical justifications for the multiple regression analysis and the associated F test.[5]

The first assumption specifies that sample data obtained on each variable must come from a population which has a normal distribution of scores. In order to determine whether this assumption was satisfied in the sample data, the skew and kurtosis for each variable's sample distribution were analyzed through the use of PROGRAM DISTX. Table 9 presents the mean, standard deviation, skew, probability of skew, kurtosis,

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[5]William L. Hays, Statistics, (New York: Holt, Rinehart and Winston, 1963), pp. 364-365. 537.

and probability of kurtosis for each variable's sample. The probability associated with each sample distribution's skew and kurtosis indicates the frequency with which the skew and kurtosis can be expected to occur by chance alone. The variables which had a highly skewed sample distribution and a low probability of occuring by chance were noted and given careful consideration since skew probability was a possible indication of a skew in the population.

The second assumption states that the error variance must have the same value for all treatment populations. This assumption was satisfied because nearly the same number of cases appear in the various samples.

The third assumption requires independence of observations. The data collection procedures utilized in this study assured the investigator that this assumption was satisfied.

Test of the Major Hypothesis

The major hypothesis of the study stated that there was no significant relationship between I & R unit effectiveness and the interrelationships of (1) I & R unit member compatibility, (2) the unit leader's Instrumental Leadership, Supportive Leadership, and Participative Leadership behavior, and (3) the level of task structure as perceived by I & R unit members.

The analytical objective was to calculate the correlations which the five independent variables, I & R unit member compatibility, Instrumental Leadership behavior, Supportive Leadership behavior,

TABLE 9

DESCRIPTIVE STATISTICS OF SAMPLE DISTRIBUTIONS

Variable	Mean	S.D.	Skew	Probability of Skew	Kurtosis	Probability of Kurtosis
I & R Unit Total Effectiveness	181.4216	22.5092	- .9232	.6412	.6587	.5175
I & R Unit Instructional Program (I & II) Effectiveness	66.8120	7.4601	.0049	.9917	.9741	.6685
I & R Unit Instructional Program (I) Effectiveness	47.1656	5.6318	.3224	.7461	.9751	.6690
I & R Unit Instructional Program (II) Effectiveness	19.6555	2.3942	- .9315	.6457	-1.0067	.3153
I & R Unit Organizational Operations (Procedural) Effectiveness	37.0304	5.9509	-1.8136	.0664	- .1457	.8790
I & R Unit Organizational Operations (Substantive) Effectiveness	59.0747	7.2693	-1.3730	.1664	1.3222	.1831
I & R Unit School-Community Relations Effectiveness	18.4707	2.8879	-2.8836	.0043	2.1298	.0313
I & R Unit Staff Development Effectiveness	19.8978	4.0099	-1.3902	.1610	.1308	.8913
Compatibility	131.2933	8.9337	.1886	.8447	1.9802	.0451
Task Structure	28.9005	3.1769	-2.0308	.0399	4.2244	.0001
Instrumental Leadership Behavior	24.7431	3.5203	-4.2106	.0001	5.1939	.0000
Supportive Leadership Behavior	40.3375	5.6680	-3.4994	.0008	2.7422	.0063
Participative Leadership Behavior	21.0275	2.8313	-2.6998	.0071	- .5224	.6081

Participative Leadership behavior, and task structure, had simultaneously with each of the eight dependent variables, measures of I & R unit effectiveness, and determine whether the correlations were significant. Multiple regression was the statistical technique chosen for this purpose because it enables one to determine the strength of the relationship between a dependent variable and two or more independent variables and the usefulness of that relationship in predicting the dependent variable.[6]

In the multiple regression analysis, a forward stepwise procedure was used in which the independent variable which explained the dependent variable to the greatest extent was entered first, followed by the independent variable which explained the dependent variable to the next greatest extent, and so forth. PROGRAM WISE*LIB.SETSTP, a computer program available at the University of Wisconsin, Wisconsin Information Systems for Education, was used to perform the stepwise multiple regression.

The tables illustrating the results of the regression analyses are composed of two sections. The first section presents, for each step, the name of the independent variable entered into the equation, the multiple correlation coefficient, the coefficient of determination which is the percentage of the variance of the dependent variable explained by the independent variable, the F test for significance of variation explained by the combination of the independent variables,

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[6]Ibid., p. 567.

and the partial F test which tests whether or not the introduction of the new variable at that particular step resulted in a significant increase in the coefficient of determination. The second section presents the standardized regression coefficient for each variable which represents the relative contribution of each independent variable to the total regression equation. At the first step, the coefficient for the variable entered is shown; at the second step, the coefficient for the first variable and the variable entered at that step are shown, and so forth.

Where the overall F test was statistically significant at the .05 level, reflecting a significant relationship between the dependent variable and the independent variables, the value was marked with an asterick. Where the partial F value was significant, indicating a significant contribution of the variable entering the equation at that step, an asterick was also used.

Table 10 presents the means, standard deviations, and correlation coefficients for the independent variables; Table 11 presents these same data for the dependent variables. The correlations between the dependent variables and the independent variables are shown in Table 12; correlational relationships are described in conjunction with the overall analysis of data.

The hypothesis that there is no significant relationship between I & R unit effectiveness and the interrelationships of (1) I & R unit member compatibility, (2) the unit leader's Instrumental Leadership, Supportive Leadership, and Participative Leadership behavior, and (3) the level of task structure as perceived by I & R unit members was tested

TABLE 10

MEANS, STANDARD DEVIATIONS, AND CORRELATIONS FOR THE INDEPENDENT VARIABLES

Variable Name	Mean	Standard Deviation	Compatibility	Task Structure	Instrumental Leadership Behavior	Supportive Leadership Behavior	Participative Leadership Behavior
Compatibility	131.29	8.93	1.000				
Task Structure	28.90	3.18	.054	1.000			
Instrumental Leadership Behavior	24.74	3.52	- .068	.145	1.000		
Supportive Leadership Behavior	40.34	5.67	- .114	- .103	.437*	1.000	
Participative Leadership Behavior	21.03	2.83	- .045	- .068	.361*	.843*	1.000

*Significant at the .05 level

TABLE 11

MEANS, STANDARD DEVIATIONS, AND CORRELATIONS FOR THE DEPENDENT VARIABLES

Variable Name	Mean	Standard Deviation	1	2	3	4	5	6	7	8
1. I & R Unit Total Effectiveness	181.42	22.51	1.000							
2. I & R Unit Instructional Program (I & II) Effectiveness	66.81	7.46	.809*	1.000						
3. I & R Unit Instructional Program (I) Effectiveness	47.16	5.63	.820*	.972*	1.000					
4. I & R Unit Instructional Program (II) Effectiveness	19.65	2.39	.595*	.831*	.675*	1.000				
5. I & R Unit Organizational Operations (Procedural) Effectiveness	37.03	5.95	.760*	.456*	.455*	.348*	1.000			
6. I & R Unit Organizational Operations (Substantive) Effectiveness	39.07	7.27	.900*	.571*	.592*	.388*	.626*	1.000		
7. I & R Unit School-Community Relations Effectiveness	18.47	2.89	.787*	.541*	.586*	.307*	.505*	.708*	1.000	
8. I & R Unit Staff Development Effectiveness	19.90	4.01	.799*	.547*	.581*	.338*	.450*	.735*	.699*	1.000

*Significant at the .05 level

TABLE 12

CORRELATIONS BETWEEN DEPENDENT VARIABLES AND INDEPENDENT VARIABLES

Dependent Variable Name	Compatibility	Task Structure	Instrumental Leadership Behavior	Supportive Leadership Behavior	Participative Leadership Behavior
I & R Unit Total Effectiveness	-.037	.023	.421*	.389*	.367*
I & R Unit Instructional Program (I & II) Effectiveness	.058	.053	.417*	.326*	.273*
I & R Unit Instructional Program (I Effectiveness	.023	.053	.403*	.348*	.301*
I & R Unit Instructional Program (II) Effectiveness	.127	.042	.352*	.196*	.141
I & R Unit Organizational Operations (Procedural) Effectiveness	.001	-.020	.381*	.337*	.390*
I & R Unit Organizational Operations (Substantive) Effectiveness	-.112	.009	.353*	.317*	.279*
I & R Unit School-Community Relations Effectiveness	-.001	-.022	.185*	.235*	.227*
I & R Unit Staff Development Effectiveness	-.116	.009	.253*	.262*	.239*

*Significant at the .05 level

using the eight dependent measures associated with I & R unit effectiveness: I & R Unit Total Effectiveness, I & R Unit Instructional Program (I & II) Effectiveness, I & R Unit Instructional Program (I) Effectiveness, I & R Unit Instructional Program (II) Effectiveness, I & R Unit Organizational Operations (Procedural) Effectiveness, I & R Unit Organizational Operations (Substantive) Effectiveness, I & R Unit School-Community Relations Effectiveness, and I & R Unit Staff Development Effectiveness. The analyses of these relationships are presented in Tables 13 through 20.

Table 13 illustrates the relationship between the dependent variable, I & R Unit Total Effectiveness, which was the sum of the scores obtained for each of the six I & R Unit Operations Questionnaire factors, and the independent variables of I & R unit member compatibility, Instrumental Leadership behavior, Supportive Leadership behavior, Participative Leadership behavior, and task structure. Thirty-four percent of the variation in I & R Unit Total Effectiveness was explained by the independent measures Instrumental Leadership behavior, Participative Leadership behavior, task structure, Supportive Leadership behavior, and compatibility, and a significant amount of the variation was explained at each step. The partial F value indicated a significant increase in the coefficient of determination only at step 1, which was the introduction of Instrumental Leadership behavior. Thirty-two percent of the I & R Unit Total Effectiveness variation was explained by Instrumental Leadership behavior while all of the other four independent variables

TABLE 13

REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I & R UNIT TOTAL EFFECTIVENESS

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Instrumental Leadership Behavior	.5698	.3247	77.42*	77.42*
2	Participative Leadership Behavior	.5792	.3355	40.39*	2.59
3	Task Structure	.5837	.3407	27.39*	1.27
4	Supportive Leadership Behavior	.5839	.3409	20.43*	.04
5	Compatibility	.5839	.3409	16.24*	.01

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Instrumental Leadership Behavior	Participative Leadership Behavior	Task Structure	Supportive Leadership Behavior	Compatibility
1	.5698				
2	.5419	.1074			
3	.5490	.1005	-.0730		
4	.5519	.1211	-.0745	-.0254	
5	.5521	.1200	-.0748	-.0238	.0065

*Significant at the .05 level

only added an additional two percent increase. The correlation coefficients (Table 12) between I & R Unit Total Effectiveness and Instrumental Leadership behavior, Supportive Leadership behavior, and Participative Leadership behavior were significant. Both the correlation coefficient and the standardized regression coefficients indicated a positive relationship between Instrumental Leadership behavior and the dependent variable. Standardized regression coefficients for the variable Instrumental Leadership behavior were all .50 or above. The introduction of variables Participative Leadership behavior, task structure, Supportive Leadership behavior, and compatibility at steps 2, 3, 4, and 5 did not significantly increase the coefficient of determination, although the multiple correlation coefficient remained significant.

Table 14 illustrates the relationship between the dependent variable, I & R Unit Instructional Program (I & II) Effectiveness, and the five independent variables. Eighteen percent of the variation in I & R Unit Instructional Program (I & II) Effectiveness was explained by the five independent measures of Instrumental Leadership behavior, Supportive Leadership behavior, compatibility, task structure, and Participative Leadership behavior, and a significant amount of the variation was explained at each step. The partial F value indicated a significant increase in the coefficient of determination at steps 1 and 2, the introduction of variables Instrumental Leadership behavior and Supportive Leadership behavior. The correlation coefficients (Table 12) between I & R Unit Instructional Program (I & II) Effectiveness and Instrumental Leadership behavior and Supportive Leadership behavior were significant.

TABLE 14

REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I & R UNIT INSTRUCTIONAL PROGRAM (I & II) EFFECTIVENESS

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Instrumental Leadership Behavior	.3433	.1179	21.52*	21.51*
2	Supportive Leadership Behavior	.4119	.1696	16.34*	9.97*
3	Compatibility	.4245	.1802	11.65*	2.04
4	Task Structure	.4280	.1832	8.86*	1.93
5	Participative Leadership Behavior	.4281	.1833	7.05*	.02

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Instrumental Leadership Behavior	Supportive Leadership Behavior	Compatibility	Task Structure	Participative Leadership Behavior
1	.3433				
2	.2661	.2403			
3	.2690	.2510	.1033		
4	.2624	.2586	.1008	.0556	
5	.2621	.2753	.1018	.0559	-.0195

*Significant at the .05 level

Both the correlation coefficients and the standardized regression coefficients indicated positive relationships between the dependent variable and Instrumental Leadership behavior and Supportive Leadership behavior. Eleven percent of the variation in I & R Unit Instrumental Program (I & II) Effectiveness was explained by the variable Instrumental Leadership behavior, while Supportive Leadership behavior at step 2 increased the variation explained by a five percent significant increase. The introduction of variables compatibility, task structure, and Participative Leadership behavior at steps 3, 4, and 5 did not significantly increase the coefficient of determination.

Table 15 illustrates the relationship between I & R Unit Instructional Program (I) Effectiveness and the five independent variables. Eighteen percent of the variation in I & R Unit Instructional Program (I) Effectiveness was explained by the five independent measures of Supportive Leadership behavior, Instrumental Leadership behavior, compatibility, task structure, and Participative Leadership behavior, and a significant amount of the variation was explained at each step. The partial F value indicated a significant increase in the coefficient of determination at steps 1 and 2, the introduction of variables Supportive Leadership behavior and Instrumental Leadership behavior. The correlation coefficients (Table 12) between the dependent variable and each of the three leadership variables were significant. Both the correlation coefficients and the standardized regression coefficients indicated positive relationships between I & R Unit Instructional Program (I) Effectiveness and Supportive Leadership behavior and Instrumental Leadership behavior.

TABLE 15

REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I & R UNIT INSTRUCTIONAL PROGRAM (I) EFFECTIVENESS

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Supportive Leadership Behavior	.3485	.1214	22.25*	22.25*
2	Instrumental Leadership Behavior	.4153	.1725	16.68*	9.89*
3	Compatibility	.4211	.1775	11.42*	.92
4	Task Structure	.4255	.1810	8.73*	.72
5	Participative Leadership Behavior	.4256	.1811	6.95*	.02

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Supportive Leadership Behavior	Instrumental Leadership Behavior	Compatibility	Task Structure	Participative Leadership Behavior
1	.3485				
2	.2717	.2387			
3	.2789	.2407	.0696		
4	.2874	.2333	.0668	.0620	
5	.2723	.2335	.0659	.0617	.0177

*Significant at the .05 level

Twelve percent of the variation in I & R Unit Instructional Program (I) Effectiveness was explained by the variable Supportive Leadership behavior, while Instrumental Leadership behavior at step 2 increased the variation explained by a five percent significant increase. The introduction of variables compatibility, task structure, and Participative Leadership behavior at steps 3, 4, and 5 did not significantly increase the coefficient of determination.

Table 16 illustrates the relationship between the dependent variable, I & R Unit Instructional Program (II) Effectiveness, and the five independent variables. Thirteen percent of the variation in I & R Unit Instructional Program (II) Effectiveness was explained by the five independent measures of Instrumental Leadership behavior, compatibility, Supportive Leadership behavior, Participative Leadership behavior, and task structure, and a significant amount of the variation was explained at each step. The partial F value indicated a significant increase in the coefficient of determination at steps 1 and 2, the introduction of variables Instrumental Leadership behavior and compatibility. The correlation coefficients (Table 12) between I & R Unit Instructional Program (II) Effectiveness and Instrumental Leadership behavior and compatibility were significant. Both the correlation coefficients and the standardized regression coefficients indicated positive relationships between the dependent variable and Instrumental Leadership behavior and compatibility. Only nine percent of the variation in I & R Unit Instructional Program (II) Effectiveness was explained by the variable Instrumental Leadership behavior, and the addition of compatibility at step 2 only increased the

TABLE 16

REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I & R UNIT INSTRUCTIONAL PROGRAM (II) EFFECTIVENESS

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Instrumental Leadership Behavior	.3028	.0917	16.25*	16.25*
2	Compatibility	.3362	.1130	10.19*	3.85*
3	Supportive Leadership Behavior	.3565	.1271	7.72*	2.57
4	Participative Leadership Behavior	.3606	.1300	5.90*	.53
5	Task Structure	.3617	.1308	4.73*	.15

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Instrumental Leadership Behavior	Compatibility	Supportive Leadership Behavior	Participative Leadership Behavior	Task Structure
1	.3028				
2	.3119	.1464			
3	.2721	.1582	.1261		
4	.2710	.1634	.2119	-.1006	
5	.2675	.1621	.2174	-.1025	.0291

*Significant at the .05 level

variation explained by a two percent significant increase. The introduction of variables Supportive Leadership behavior, Participative Leadership behavior, and task structure at steps 3, 4, and 5 did not significantly increase the coefficient of determination.

Table 17 illustrates the relationship between the dependent variable, I & R Unit Organizational Operations (Procedural) Effectiveness, and the five independent measures of Participative Leadership behavior, Instrumental Leadership behavior, Supportive Leadership behavior, compatibility, and task structure, and a significant amount of variation was explained at each step. The partial F value indicated a significant increase in the coefficient of determination at steps 1 and 2, the introduction of variables Participative Leadership behavior and Instrumental Leadership behavior. The correlation coefficients (Table 12) between I & R Unit Organizational Operations (Procedural) Effectiveness and Participative Leadership behavior and Instrumental Leadership behavior were significant. Both the correlation coefficients and the standardized regression coefficients indicated positive relationships between the dependent variable and Participative Leadership behavior and Instrumental Leadership behavior. Fifteen percent of the variation in I & R Unit Organizational Operations (Procedural) Effectiveness was explained by the variable Participative Leadership behavior, and Instrumental Leadership behavior at step 2 increased the variation explained by an eight percent significant increase. The introduction of variables Supportive Leadership behavior, compatibility, and task structure at steps 3, 4, and 5 did not significantly increase the coefficient of determination.

TABLE 17

REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I & R UNIT ORGANIZATIONAL OPERATIONS (PROCEDURAL) EFFECTIVENESS

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Participative Leadership Behavior	.3895	.1517	28.80*	28.80*
2	Instrumental Leadership Behavior	.4854	.2356	24.66*	17.55*
3	Supportive Leadership Behavior	.4872	.2374	16.50*	.37
4	Compatibility	.4881	.2382	12.35*	.17
5	Task Structure	.4888	.2389	9.86*	.15

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Participative Leadership Behavior	Instrumental Leadership Behavior	Supportive Leadership Behavior	Compatibility	Task Structure
1	.3895				
2	.3114	.2999			
3	.3767	.3087	-.0802		
4	.3717	.3095	-.0729	.0288	
5	.3734	.3128	-.0782	.0300	-.0276

*Significant at the .05 level

Table 18 illustrates the relationship between the dependent variable, I & R Unit Organizational Operations (Substantive) Effectiveness, and the five independent variables. Nineteen percent of the variation in I & R Unit Organizational Operations (Substantive) Effectiveness was explained by the five independent measures of Instrumental Leadership behavior, Supportive Leadership behavior, compatibility, Participative Leadership behavior, and task structure, and a significant amount of the variation was explained at each step. The partial F value indicated a significant increase in the coefficient of determination at steps 1 and 2, the introduction of Instrumental Leadership behavior and Supportive Leadership behavior. The correlation coefficients (Table 12) between I & R Unit Organizational Operations (Substantive) Effectiveness and Instrumental Leadership behavior and Supportive Leadership behavior were significant. Both the correlation coefficients and the standardized regression coefficients indicated positive relationships between the dependent variable and Instrumental Leadership behavior and Supportive Leadership behavior. Fifteen percent of the variation in I & R Unit Organizational Operations (Substantive) was explained by the variable Instrumental Leadership behavior, and Supportive Leadership behavior at step 2 increased the variation explained by a four percent significant increase. The introduction of variables compatibility, Participative Leadership behavior, and task structure did not significantly increase the coefficient of determination.

Table 19 illustrates the relationship between the dependent variable, I & R Unit School-Community Relations Effectiveness, and the five

TABLE 18

REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I & R UNIT ORGANIZATIONAL OPERATIONS (SUBSTANTIVE) EFFECTIVENESS

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Instrumental Leadership Behavior	.3841	.1475	27.87*	27.87*
2	Supportive Leadership Behavior	.4352	.1894	18.69*	8.26*
3	Compatibility	.4406	.1941	12.76*	.92
4	Participative Leadership Behavior	.4418	.1952	9.58*	.22
5	Task Structure	.4420	.1953	7.62*	.02

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Instrumental Leadership Behavior	Supportive Leadership Behavior	Compatibility	Participative Leadership Behavior	Task Structure
1	.3841				
2	.3146	.2161			
3	.3126	.2089	-.0688		
4	.3133	.1558	-.0720	.0624	
5	.3120	.1578	-.0725	.0617	.0109

*Significant at the .05 level

TABLE 19

REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I & R UNIT SCHOOL-COMMUNITY RELATIONS EFFECTIVENESS

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Supportive Leadership Behavior	.2352	.0553	9.42*	9.42*
2	Instrumental Leadership Behavior	.2730	.0745	6.44*	3.32
3	Participative Leadership Behavior	.2786	.0776	4.46*	.53
4	Compatibility	.2796	.0782	3.35*	.10
5	Task Structure	.2802	.0785	2.67*	.05

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Supportive Leadership Behavior	Instrumental Leadership Behavior	Participative Leadership Behavior	Compatibility	Task Structure
1	.2352				
2	.1881	.1464			
3	.1004	.1476	.1035		
4	.1067	.1483	.0991	.0248	
5	.1034	.1504	.1002	.0255	-.0172

*Significant at the .05 level

independent variables. Only eight percent of the variation in I & R Unit School-Community Relations Effectiveness was explained by the five independent measures of Supportive Leadership behavior, Instrumental Leadership behavior, Participative Leadership behavior, compatibility, and task structure. Five percent of the variation in the dependent variable was explained by the variable Supportive Leadership behavior. The introduction of variables Instrumental Leadership behavior, Participative Leadership behavior, compatibility, and task structure at steps 2, 3, 4, and 5 did not significantly increase the coefficient of determination. The correlation coefficient (Table 12) between I & R Unit School-Community Relations Effectiveness and Supportive Leadership behavior was significant and both the correlation coefficient and standardized regression coefficients indicated a positive relationship to the dependent variable.

Table 20 illustrates the relationship between the dependent variable, I & R Unit Staff Development Effectiveness, and the five independent variables. Sixteen percent of the variation in I & R Unit Staff Development Effectiveness was explained by the five independent measures of Instrumental Leadership behavior, compatibility, Participative Leadership behavior, task structure, and Supportive Leadership behavior. Fifteen percent of the variation in the dependent variable was explained by the variable Instrumental Leadership behavior. The introduction of variables compatibility, Participative Leadership behavior, task structure, and Supportive Leadership behavior at steps 2, 3, 4, and 5 did not significantly increase the coefficient of determination. The correlation

TABLE 20

REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I & R UNIT STAFF DEVELOPMENT EFFECTIVENESS

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Instrumental Leadership Behavior	.3823	.1462	27.56*	27.56*
2	Compatibility	.3921	.1537	14.53*	1.43
3	Participative Leadership Behavior	.4006	.1605	10.13*	1.27
4	Task Structure	.4034	.1627	7.68*	.42
5	Supportive Leadership Behavior	.4034	.1627	6.10*	.00

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Instrumental Leadership Behavior	Compatibility	Participative Leadership Behavior	Task Structure	Supportive Leadership Behavior
1	.3823				
2	.3769	-.0871			
3	.3549	-.0846	.0850		
4	.3597	-.0819	.0806	-.0478	
5	.3595	-.0818	.0790	-.0477	.0020

*Significant at the .05 level

coefficient (Table 12) between I & R Unit Staff Development Effectiveness and Instrumental Leadership behavior was significant, and both the correlation coefficient and standardized regression coefficients indicated a positive relationship to the dependent variable.

The data analysis for the eight regression models presented in Tables 13 through 20 provided some insights into the relationships between each of the eight dependent I & R unit effectiveness variables and the five independent variables of I & R unit member compatibility, Instrumental Leadership behavior, Supportive Leadership behavior, Participative Leadership behavior, and task structure. Additional important information, however, was presented in the inter-correlation matrices, Tables 10 through 12. In the forward stepwise procedure in each of the regression analyses, the independent variable which explained the dependent variable to the greatest extent was entered into the regression equation first, the independent variable which explained the dependent variable the next greatest was entered into the regression equation second, and so forth. In four of the models, the variable Supportive Leadership behavior entered the equation early and was identified as significantly increasing the coefficient of determination. It is interesting to note, however, that the variable Participative Leadership behavior in correlation with the dependent variables of I & R Unit Instructional Program (I & II) Effectiveness, I & R Unit Instructional Program (I) Effectiveness, I & R Unit Organizational Operations (Substantive) Effectiveness, and I & R Unit School-Community Relations Effectiveness were only .052, .047, .038, and .008 respectively, less than the

correlations between Supportive Leadership behavior and these independent variables. It is therefore reasonable to expect that if Supportive Leadership behavior would have been withheld from the model, Participative Leadership behavior would have played an important role in explaining variation in the dependent variables. Kerlinger indicated that most variables which are correlated with a dependent variable are also correlated among themselves.[7] Table 10 showed the intercorrelation coefficient of Supportive Leadership behavior and Participative Leadership behavior to be .843. Kerlinger also stated that the ideal predictive situation is when the correlations between the dependent variables and the independent variables are high, and the correlations among the independent variables are low.[8] This was not the case for Supportive Leadership behavior and Participative Leadership behavior, and the correlation coefficient of .843 suggests that the variable Supportive Leadership behavior was dependent upon the variable Participative Leadership behavior or vise versa.

In summary, these analyses revealed a statistically significant relationship between the dependent and independent variables. The amount of variation in each of the dependent variables explained by the independent variables were: I & R Unit Total Effectiveness, 37.09 percent; I & R Unit Instructional Program (I & II) Effectiveness, 18.33 percent; I & R Unit Instructional Program (I) Effectiveness, 18.11

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[7]Kerlinger, op. cit., p. 622.

[8]Ibid.

percent; I & R Unit Instructional Program (II) Effectiveness, 13.08 percent; I & R Unit Organizational Operations (Procedural) Effectiveness, 23.89 percent; I & R Unit Organizational Operations (Substantive) Effectiveness, 19.53 percent; I & R Unit School-Community Relations Effectiveness, 7.85 percent; and I & R Unit Staff Development Effectiveness, 16.27 percent. Thus, the results indicate that the hypothesis of no significant relationship between I & R unit effectiveness and the interrelationship of I & R unit member compatibility, unit leader Instrumental Leadership behavior, unit leader Supportive Leadership behavior, unit leader Participative Leadership behavior, and the level of task structure should be rejected.

In response to an interest in developing the best regression model from the data, an analysis was made of all the variables obtained from the questionnaires to determine whether it was possible to obtain a multiple correlation and a coefficient of determination greater than those obtained in the test of the major hypothesis. An analysis of the correlations between the eight dependent variables and thirteen independent variables not included in the major hypothesis was performed to identify those independent variables which had high correlations with the dependent variables and low correlations with the other independent variables and would contribute to the explained variation in the dependent variables.[9] This analysis indicated one variable, the I & R unit's participation in a school staff development workshop in which unit members were trained to implement IGE, should be added to the model. The

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[9] Ibid.

percentage of people who did not participate in staff development activities was used in calculating correlations; therefore, the sign of the correlations was changed.

PROGRAM WISE*LIB.SETSTP, the stepwise multiple regression analysis, was used again. The program was directed to enter at each step that variable which contributed the greatest increase in the multiple correlation coefficient. The results of this analysis appear in Tables 21 through 28.

The F test indicated that Instrumental Leadership Behavior contributed significantly to explaining the variance of each dependent variable in the expanded models. The partial F test indicated the introduction of the Workshop variable into the expanded model resulted in significant increases in the coefficients of determination for the dependent variables of: I & R Unit Total Effectiveness at the second step; I & R Unit Organizational Operations (Procedural) Effectiveness at the third step; I & R Unit Organizational (Substantive) Effectiveness at the third step; I & R Unit School-Community Relations Effectiveness at the first step; I & R Unit Staff Development Effectiveness at the second step.

A comparison of the results of this analysis with those obtained in the test of the major hypothesis are presented in Table 29, which presents the multiple correlation coefficients (R) and the coefficients of determination (R^2) obtained for the tests of major hypothesis and for the expanded models. Kerlinger pointed out the limited usefulness of adding new variables to a regression equation due to the regression law of diminishing returns.[10]

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[10]Ibid., p. 625.

TABLE 21

REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I & R UNIT TOTAL EFFECTIVENESS--AN EXPANDED MODEL

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Instrumental Leadership Behavior	.5698	.3247	77.42*	77.42*
2	Workshop Participation	.6297	.3965	52.56*	19.03*
3	Supportive Leadership Behavior	.6367	.4053	36.13*	2.36
4	Task Structure	.6385	.4077	27.19*	.62
5	Participative Leadership Behavior	.6392	.4085	21.69*	.23
6	Compatibility	.6392	.4086	17.96*	.00

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Instrumental Leadership Behavior	Workshop Participation	Supportive Leadership Behavior	Task Structure	Participative Leadership Behavior	Compatibility
1	.5698					
2	.5490	.2687				
3	.5167	.2725	.0994			
4	.5229	.2684	.0922	-.0492		
5	.5241	.2644	.0450	-.0507	.0553	
6	.5241	.2645	.0446	-.0506	.0556	-.0018

TABLE 22

REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I & R UNIT INSTRUCTIONAL PROGRAM (I & II) EFFECTIVENESS--AN EXPANDED MODEL

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Instrumental Leadership Behavior	.3433	.1179	21.52*	21.52*
2	Supportive Leadership Behavior	.4119	.1696	16.34*	9.97*
3	Compatibility	.4245	.1802	11.65*	2.04
4	Workshop Participation	.4314	.1861	9.03*	1.92
5	Task Structure	.4358	.1899	7.36*	.74
6	Participative Leadership Behavior	.4364	.1904	6.11*	.09

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Instrumental Leadership Behavior	Workshop Participation	Supportive Leadership Behavior	Task Structure	Participative Leadership Behavior	Compatibility
1	.3433					
2	.2661	.2403				
3	.2690	.2510	.1033			
4	.2619	.2540	.1002	.0776		
5	.2538	.2628	.0971	.0829	.0628	
6	.2530	.2975	.0991	.0858	.0638	-.0404

*Significant at the .05 level

TABLE 23

REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I & R UNIT INSTRUCTIONAL PROGRAM (I) EFFECTIVENESS--AN EXPANDED MODEL

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Supportive Leadership Behavior	.3485	.1214	22.25*	22.25*
2	Instrumental Leadership Behavior	.4153	.1725	16.68*	9.88*
3	Workshop Participation	.4221	.1781	11.49*	1.09
4	Task Structure	.4280	.1832	8.86*	.97
5	Compatibility	.4326	.1871	7.23*	.76
6	Participative Leadership Behavior	.4326	.1871	5.98*	.00

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Supportive Leadership Behavior	Instrumental Leadership Behavior	Workshop Participation	Task Structure	Compatibility	Participative Leadership Behavior
1	.3485					
2	.2717	.2387				
3	.2749	.2318	.0754			
4	.2854	.2227	.0814	.0720		
5	.2914	.2252	.0786	.0689	.0633	
6	.2926	.2251	.0787	.0689	.0634	-.0015

*Significant at the .05 level

TABLE 24

REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I & R UNIT INSTRUCTIONAL PROGRAM (II) EFFECTIVENESS--AN EXPANDED MODEL

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Instrumental Leadership Behavior	.3028	.0917	16.25*	16.25*
2	Compatibility	.3362	.1130	10.19*	3.85*
3	Supportive Leadership Behavior	.3563	.1271	7.72*	2.57
4	Workshop Participation	.3634	.1321	6.01*	.90
5	Participative Leadership Behavior	.3689	.1361	4.95*	.73
6	Task Structure	.3706	.1374	4.14*	.23

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Instrumental Leadership Behavior	Compatibility	Supportive Leadership Behavior	Workshop Participation	Participative Leadership Behavior	Task Structure
1	.3028					
2	.3119	.1464				
3	.2721	.1582	.1261			
4	.2655	.1554	.1288	.0707		
5	.2635	.1612	.2309	.0789	-.1194	
6	.2588	.1595	.2387	.0822	-.1225	.0366

*Significant at the .05 level

TABLE 25

REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I & R UNIT
ORGANIZATIONAL OPERATIONS (PROCEDURAL) EFFECTIVENESS--AN EXPANDED MODEL

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Participative Leadership Behavior	.3895	.1517	28.80*	28.80*
2	Instrumental Leadership Behavior	.4854	.2356	24.66*	17.55*
3	Workshop Participation	.5457	.2978	22.48*	14.09*
4	Compatibility	.5462	.2983	16.80*	.12
5	Supportive Leadership Behavior	.5463	.2984	13.35*	.01
6	Task Structure	.5463	.2984	11.06*	.00

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Participative Leadership Behavior	Instrumental Leadership Behavior	Workshop Participation	Compatibility	Supportive Leadership Behavior	Task Structure
1	.3895					
2	.3114	.2999				
3	.3013	.2831	.2504			
4	.3020	.2845	.2494	.0228		
5	.3126	.2859	.2485	.0220	-.0130	
6	.3130	.2865	.2481	.0222	-.0140	-.0049

*Significant at the .05 level

TABLE 26

REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I & R UNIT ORGANIZATIONAL OPERATIONS (SUBSTANTIVE) EFFECTIVENESS--AN EXPANDED MODEL

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Instrumental Leadership Behavior	.3841	.1475	27.87*	27.87*
2	Supportive Leadership Behavior	.4352	.1894	18.69*	8.26*
3	Workshop Participation	.4801	.2305	15.87*	8.48*
4	Compatibility	.4861	.2363	12.22*	1.21
5	Task Structure	.4870	.2372	9.76*	.18
6	Participative Leadership Behavior	.4870	.2372	8.09*	.01

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Instrumental Leadership Behavior	Supportive Leadership Behavior	Workshop Participation	Compatibility	Task Structure	Participative Leadership Behavior
1	.3841					
2	.3146	.2161				
3	.2960	.2248	.2033			
4	.2935	.2169	.2064	-.0771		
5	.2897	.2211	.2090	-.0785	.0302	
6	.2899	.2117	.2082	-.0791	.0299	.0110

*Significant at the .05 level

TABLE 27

REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I & R UNIT SCHOOL-COMMUNITY RELATIONS EFFECTIVENESS--AN EXPANDED MODEL

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Workshop Participation	.3260	.1063	19.14*	19.14*
2	Supportive Leadership Behavior	.4045	.1636	15.65*	10.98*
3	Instrumental Leadership Behavior	.4193	.1759	11.31*	7.03*
4	Compatibility	.4197	.1761	8.45*	.05
5	Participative Leadership Behavior	.4199	.1763	6.72*	.03
6	Task Structure	.4200	.1764	5.57*	.02

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Workshop Participation	Supportive Leadership Behavior	Instrumental Leadership Behavior	Compatibility	Participative Leadership Behavior	Task Structure
1	.3260					
2	.3292	.2396				
3	.3196	.2017	.1172			
4	.3189	.2035	.1177	.0172		
5	.3173	.1832	.1181	.0160	.0238	
6	.3183	.1853	.1166	.0155	.0227	0119

*Significant at the .05 level

TABLE 28

REGRESSION ANALYSIS WITH DEPENDENT VARIABLE OF I & R UNIT STAFF DEVELOPMENT EFFECTIVENESS--AN EXPANDED MODEL

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Instrumental Leadership Behavior	.3823	.1462	27.56*	27.56*
2	Workshop Participation	.4503	.2027	20.34*	11.35*
3	Compatibility	.4607	.2122	14.28*	1.91
4	Supportive Leadership Behavior	.4676	.2187	11.05*	1.31
5	Task Structure	.4683	.2193	8.82*	.12
6	Participative Leadership Behavior	.4684	.2194	7.31*	.02

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Instrumental Leadership Behavior	Workshop Participation	Compatibility	Supportive Leadership Behavior	Task Structure	Participative Leadership Behavior
1	.3823					
2	.3638	.2385				
3	.3574	.2428	-.0976			
4	.3302	.2457	-.0897	.0854		
5	.3334	.2436	-.0885	.0819	-.0251	
6	.3338	.2422	-.0894	.0646	-.0256	.0201

*Significant at the .05 level

TABLE 29

COMPARISON OF THE RESULTS OBTAINED FROM THE
TESTS OF THE MAJOR HYPOTHESIS AND FROM THE EXPANDED MODELS

Dependent Variable	Major Hypothesis		Expanded Model		Increase In	
	R	R^2	R	R^2	R	R^2
I & R Unit Total Effectiveness	.5839	.3409	.6392	.4086	.0553	.0677
I & R Unit Instructional Program (I & II) Effectiveness	.4281	.1833	.4364	.1904	.0083	.0071
I & R Unit Instructional Program (I) Effectiveness	.4256	.1811	.4326	.1871	.0070	.0060
I & R Unit Instructional Program (II) Effectiveness	.3617	.1308	.3706	.1374	.0089	.0066
I & R Unit Organizational Operations (Procedural) Effectiveness	.4888	.2389	.5464	.2984	.0576	.0595
I & R Unit Organizational Operations (Substantive) Effectiveness	.4420	.1953	.4870	.2372	.0450	.0419
I & R Unit School-Community Relations Effectiveness	.2802	.0785	.4200	.1764	.1398	.0979
I & R Unit Staff Development Effectiveness	.4034	.1627	.4684	.2194	.0650	.0567

Tests of the Ancillary Hypotheses

The ancillary hypotheses presented in Chapter I were tested using a Pearson product moment correlation procedure to determine the strength of the linear relationship between the variables considered in each of the hypotheses. This analysis was performed by PROGRAM WISE*STAT.DISTX which produced means, standard deviations, correlations, skew, kurtosis, the probabilities associated with the correlations, skew, and kurtosis.

The ancillary hypotheses were posed to assess empirically the relationship between I & R unit effectiveness and several factors which have been assumed to be related to it.

The hypotheses, as stated, were:

1. There is no significant relationship between I & R unit effectiveness and the number of the I & R unit members.

2. There is no significant relationship between I & R unit effectiveness and the number of hours the I & R unit members meet per week.

3. There is no significant relationship between I & R unit effectiveness and the percentage of the I & R unit members who participated in staff development activities for school staff as described in the IGE/MUS-E implementation strategy.

Table 30 describes the correlation coefficients obtained between each of the eight I & R unit effectiveness variables and the independent variables in the three ancillary hypotheses. The probability that coefficients as high or higher would occur purely by chance is indicated within the parentheses below each coefficient. The means, standard deviations, skew probability of skew, kurtosis, and probability of kurtosis are presented in Appendix G.

TABLE 30

CORRELATION COEFFICIENTS OBTAINED FOR THE THREE ANCILLARY HYPOTHESES

Dependent Variable	Number of I & R Unit Members	Number of Hours an I & R Unit Meets Per Week	Percentage of the I & R Unit Members Who Participated in Staff Development Activities for School Staff
I & R Unit Total Effectiveness	-.054 (.205)	.041 (.623)	.251 (.002*)
I & R Unit Instructional Program (I & II) Effectiveness	.100 (.204)	-.060 (.539)	.098 (.209)
I & R Unit Instructional Program (I) Effectiveness	.110 (.160)	-.043 (.602)	.090 (.254)
I & R Unit Instructional Program (II) Effectiveness	.051 (.523)	-.088 (.276)	.096 (.223)
I & R Unit Organizational Operations (Procedural)) Effectiveness	.141 (.071)	.019 (.805)	.290 (.000*)
I & R Unit Organizational Operations (Substantive) Effectiveness	.074 (.649)	.128 (.108)	.223 (.004*)
I & R Unit School-Community Relations Effectiveness	-.096 (.220)	.068 (.595)	.326 (.000*)
I & R Unit Staff Developoment Effectiveness	-.084 (.289)	.045 (.585)	.215 (.006*)

*Significant at the .05 level

Of these three ancillary questions tested, only I & R unit members' participation in staff development activities for school staff was significantly correlated with any of the I & R unit effectiveness variables. I & R unit member participation in staff development activities was significantly correlated with I & R Unit Total Effectiveness, I & R Unit Organizational Operations (Procedural) Effectiveness, I & R Unit Organizational Operations (Substantive) Effectiveness, I & R Unit School-Community Relations Effectiveness, and I & R Unit Staff Development Effectiveness. The number of I & R unit members and the number of hours an I & R unit meets per week were found to have non-significant correlations with each of the eight I & R unit effectiveness variables.

Inherent within the use of the correlational method of hypothesis testing, causality cannot be inferred from the obtained results; however, the results should be considered worthy of observational analysis if a determination of causality is subsequently desired.

CHAPTER IV

SUMMARY, FINDINGS, CONCLUSIONS, AND IMPLICATIONS

This chapter consists of three sections. The first section contains a summary of the study as presented in the first three chapters. The second section presents the findings and conclusions of the study. The chapter concludes with implications for practice and further research.

Summary

In Chapter I, the problem of identifying those factors which should be considered in staffing an I & R unit in order for it to perform effectively was presented. The main function of an I & R unit was identified as planning, carrying out, and evaluating as a team, the instructional programs for children assigned to the unit. Studies conducted by Pellegrin,[1] Klausmeier,[2] and Ironside[3] presented evidence that despite the development of the prototypic organizational model and other aspects of the IGE system and despite the development of the set of performance objectives for I & R units, there is a considerable amount of variance among I & R units in attaining the R and D Center's specifically stated

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[1]Pellegrin, loc. cit.

[2]Klausmeier, Quilling, and Sorenson, The Development and Evaluation of the Multiunit Elementary School, 1966-70, op. cit., p. 9.

[3]Ironside, op. cit., pp. 129-131.

performance objectives. In response to the evidence found in these three studies, this study was undertaken to determine empirically factors which significantly related to the operational effectiveness of I & R units.

A review of the research and literature dealing with small group behavior indicated a variety of factors which may influence small group effectiveness and that a theoretical integration of these factors is needed. Shaw organized variables which influence group process into four environments: the physical environment, the personal environment, the social environment, and the task environment.

A theoretical model of small group effectiveness based upon the framework suggested by Shaw and selected aspects of social systems theory, Fundamental Interpersonal Relations Orientation Theory, and Path-Goal Theory of Leadership was proposed. Small group effectiveness was presented as being a function of the interrelationships of the personal environment, the physical environment, the social environment, and the task environment.

The following hypothesis was posed for testing:

> There is no significant relationship between I & R unit effectiveness and the interrelationships of (1) I & R unit member compatibility, (2) the unit leader's Instrumental Leadership Supportive Leadership, and Participative Leadership behaviors, and (3) the level of task structure as perceived by I & R unit members.

Three ancillary hypotheses were also posed for testing:

1. There is no significant relationship between I & R unit effectiveness and the number of I & R unit members.

2. There is no significant relationship between I & R unit effectiveness and the number of hours the I & R unit meets per week.

3. There is no significant relationship between I & R unit effectiveness and the percentage of the I & R unit members who participated in staff development activities for school staff as described in the IGE/MUS-E implementation strategy.

For this study, effectiveness, the dependent variable, was defined as goal achievement. The independent variables were each defined. Compatibility was defined as a property of a relation among people that leads to mutual satisfaction of interpersonal needs and harmonious co-existence. The three leadership behaviors were defined as follows: Instrumental Leadership behavior--clarifies expectations, assigns specific tasks, and specifies procedures to be followed; Supportive Leadership behavior—considers the needs of subordinates and is friendly and approachable; Participative Leadership behavior--allows subordinates to influence his/her decisions by asking for suggestions and includes subordinates in decision making. Task was defined as what must be done in order for the group to achieve its goal or subgoal. A task is highly unstructured when task stimuli and instructions are complex, non-repetitive, and ambiguous; a task is highly structured when task stimuli and instructions are simple, repetitive, and clear.

Chapter II presented the development of the survey instruments, validity and reliability analyses of the instrument, a definition of the study population, a description of the procedures for sample selection, a description of the data collection procedure, and the statistical techniques employed in analyzing the data. The section on instrumentation

to measure I & R unit effectiveness, "I & R Unit Operations Questionnaire," was of particular significance, because no measures existed for this purpose. Data were collected from 163 I & R units in forty-five schools, which were randomly selected from a population of schools meeting specified criteria. The statistical procedure used to test the major hypothesis was stepwise multiple regression; the relationship proposed in each of the ancillary hypotheses was tested using a Pearson product-moment correlation coefficient. Chapter III presented the results of the statistical analyses of the collected data.

Findings and Conclusions

This section contains an analysis of the major hypothesis and the ancillary hypotheses being tested in this study and the conclusions drawn from these tests. Because eight different measures of I & R unit effectiveness were used to test the major hypothesis and because the hypothesis included multiple variables, no unilateral conclusions could be drawn. However, the detection of commonality among significant variables is discussed relative to general conclusions about the hypotheses. The probability level for all tests of statistical significance was established at .05.

Findings

The major hypothesis stated, "There is no significant relationship between I & R unit effectiveness and the interrelationship of (1) I & R unit member compatibility, (2) the unit leader's Instrumental Leadership behavior, Supportive Leadership behavior, and Participative Leadership

behavior, and (3) the level of task structure as perceived by I & R unit members." This hypothesis was testing using eight different measures of I & R unit effectiveness as the dependent variable. The major findings of the multiple linear regression analyses were:

A. For the original model

1a. In the regression equation, only Instrumental Leadership behavior contributed significantly to the variance in I & R Unit Total Effectiveness.

1b. The Pearson product-moment correlation indicated that Instrumental Leadership behavior, Supportive Leadership behavior, and Participative Leadership behavior are each significantly correlated with I & R Unit Total Effectiveness.

2a. In the regression equation, Instrumental Leadership and Supportive Leadership behavior contributed significantly to the variance in I & R Unit Instructional Program (I & II) Effectiveness.

2b. The Pearson product-moment correlation indicated that Instrumental Leadership behavior, Supportive Leadership behavior, and Participative Leadership behavior are each significantly correlated with I & R Unit Instructional Program (I & II) Effectiveness.

3a. In the regression equation, Supportive Leadership behavior and Instrumental Leadership behavior contributed significantly to the variance in I & R Unit Instructional Program (I) Effectiveness.

3b. The Pearson product-moment correlation indicated that Instrumental Leadership behavior, Supportive Leadership behavior, and Participative Leadership behavior are each significantly correlated with I & R Unit Instructional Program (I) Effectiveness.

4a. In the regression equation, Instrumental Leadership behavior and compatibility contributed significantly to the variance in I & R Unit Instructional Program (II) Effectiveness.

4b. The Pearson product-moment correlation indicated that Instrumental Leadership behavior are each significantly

correlated with I & R Unit Instructional Program (II) Effectiveness.

5a. In the regression equation, Participative Leadership behavior and Instrumental Leadership behavior contributed significantly to the variance in I & R Unit Organizational Operations (Procedural) Effectiveness.

5b. The Pearson product-moment correlation indicated that Instrumental Leadership behavior, Supportive Leadership behavior, and Participative Leadership behavior are each significantly correlated with I & R Unit (Procedural) Effectiveness.

6a. In the regression equation, Instrumental Leadership behavior and Supportive Leadership behavior contributed significantly to the variance in I & R Unit Organizational Operations (Substantive) Effectiveness.

6b. The Pearson product-moment correlation indicated that Instrumental Leadership behavior, Supportive Leadership behavior, and Participative Leadership behavior are each significantly correlated with I & R Unit (Substantive) Effectiveness.

7a. In the regression equation, only Supportive Leadership behavior contributed significantly to the variance in I & R Unit School-Community Relations Effectiveness.

7b. The Pearson product-moment correlation indicated that Instrumental Leadership behavior, Supportive Leadership behavior, and Participative Leadership behavior are each significantly correlated with I & R Unit School-Community Relations Effectiveness.

8a. In the regression equation, only Instrumental Leadership behavior contributed significantly to the variance in I & R Unit Staff Development Effectiveness.

8b. The Pearson product-moment correlation indicated that Instrumental Leadership behavior, Supportive Leadership behavior, and Participative Leadership behavior are each significantly correlated with I & R Unit Staff Development Effectiveness.

B. For the expanded model

1. In the expanded regression equation, Instrumental Leadership behavior and workshop participation contributed significantly to the variance in I & R Unit Total Effectiveness.

2. In the expanded regression equation, Instrumental Leadership Leadership behavior and Supportive Leadership behavior contributed significantly to the variance in I & R Unit Instructional Program (I & II) Effectiveness.

3. In the expanded regression equation, Supportive Leadership behavior and Instrumental Leadership behavior contributed significantly to the variance in I & R Unit Instructional Program (I) Effectiveness.

4. In the expanded regression equation, Instrumental Leadership behavior and compatibility contributed significantly to the variance in I & R Unit Instructional Program (II) Effectiveness.

5. In the expanded regression equation, Participative Leadership behavior, Instrumental Leadership behavior, and workshop participation contributed significantly to the variance in I & R Unit Organizational Operations (Procedural) Effectiveness.

6. In the expanded regression equation, Instrumental Leadership behavior, Supportive Leadership behavior, and workshop participation contributed significantly to the variance in I & R Unit Organizational Operations (Substantive) Effectiveness.

7. In the expanded regression equation, workshop participation, Supportive Leadership behavior, and Instrumental Leadership behavior contributed significantly to the variance in I & R Unit School-Community Relations Effectiveness.

8. In the expanded regression equation, Instrumental Leadership behavior and workshop participation contributed significantly to the variance in I & R Unit Staff Development Effectiveness.

Theory and related literature indicated that relationships would be expected to exist between small group effectiveness and group member compatibility, leadership behavior, and perceived task structure level. The findings in this study indicated that the expected relationships do exist; however, only leadership behavior contributed significantly to the amount of variance in each of the dependent variables.

There were consistently strong relationships between each of the measures of I & R unit effectiveness and Instrumental Leadership behavior. The F tests indicated that the other independent variables were found to have significant relationships with I & R unit effectiveness when considered in combination.

Instrumental Leadership behavior and Supportive Leadership behavior were often significantly related to I & R unit effectiveness. The descriptive data indicated generally medium to low scores for the perceived level of task structure. According to House's Path-Goal Theory of Leadership, significant relationships between I & R unit effectiveness and the leadership behaviors would be expected when task structure was medium to low.

I & R unit member compatibility was found to be related to each measure of I & R unit effectiveness when considered in combination with Instrumental Leadership behavior, Supportive Leadership behavior, Participative Leadership behavior, task structure, and workshop participation. However, it was surprising not to find group member compatibility accounting for a significant proportion of the variance in most of the I & R unit effectiveness categories. The partial F tests indicated that the amount of variance explained was significantly increased only in I & R unit instructional program (II) effectiveness.

The first ancillary hypothesis stated, "There is no significant relationship between I & R unit effectiveness and the number of I & R unit members." No statistically significant correlation was found between any of the eight measures of I & R unit effectiveness and the number of I & R unit members.

The second ancillary hypothesis stated, "There is no significant relationship between I & R unit effectiveness and the number of hours the I & R unit meets per week." No statistically significant correlation was found between any of the eight measures of I & R unit effectiveness and the number of hours the I & R unit meets per week.

The third ancillary hypothesis stated, "There is no significant relationship between I & R unit effectiveness and the percentage of the I & R unit members who participated in staff development activities for school staff as described in the IGE/MUS-E implementation strategy." A statistically significant correlation was found between the percentage of the I & R unit members who participated in staff development activities for school staff as described in the IGE/MUS-E implementation strategy and each of the following variables: I & R unit total effectiveness; I & R unit organizational operations (procedural) effectiveness; I & R unit organizational operations (substantive) effectiveness; I & R unit school-community relations effectiveness; I & R unit staff development effectiveness. No statistically significant correlation was found between the percentage of the I & R unit members who participated in staff development activities for school staff as described in the IGE/MUS-E implementation strategy and each of the following variables: I & R unit instructional program (I & II) effectiveness; I & R unit instructional program (I) effectiveness; I & R unit instructional program (II) effectiveness.

Conclusions

Based on the findings of the study, the following conclusions were drawn with respect to I & R unit effectiveness:

1. Of the variables considered, I & R unit member compatibility, the unit leader's Instrumental Leadership behavior, the unit leader's Supportive Leadership behavior, the unit leader's Participative Leadership behavior, and the level of task structure, only leader behavior significantly influenced each of the eight measures of I & R unit effectiveness.

2. The amount of variance explained is significantly increased by Instrumental Leadership behavior in I & R unit total effectiveness, I & R unit instructional program (I & II) effectiveness, I & R unit instructional program (I) effectiveness, I & R unit instructional program (II) effectiveness, I & R unit organizational operations (procedural) effectiveness, I & R unit organizational operations (substantive) effectiveness, and I & R unit staff development effectiveness (all measures of I & R unit effectiveness except I & R unit school-community relations effectiveness).

3. When workshop participation is added to the models, the amount of variance explained is significantly increased by Instrumental Leadership behavior in each of the eight measures of I & R unit effectiveness.

4. The amount of variance explained is significantly increased by I & R unit member workshop participation in I & R unit total effectiveness, I & R unit organizational operations (procedural) effectiveness, I & R unit organizational operations (substantive) effectiveness, I & R unit school-community relations effectiveness, and I & R unit staff development effectiveness.

5. There is no significant relationship between I & R unit effectiveness and the number of I & R unit members.

6. There is no significant relationship between I & R unit effectiveness and the number of hours the I & R unit meets per week.

7. The percentage of the I & R unit members who participated in staff development activities for school staff as described in the IGE/MUS-E implementation strategy is significantly related to each of the following: I & R unit total effectiveness; I & R unit organizational operations (procedural) effectiveness; I & R unit organizational operations (substantive) effectiveness; I & R unit school-community relations effectiveness; I & R unit staff development effectiveness.

The conclusions that were drawn from the study are limited to the population of IGE schools from which the sample was drawn. The conclusions are limited by having investigated only intragroup variables, only those variables characteristically within the small group. The conclusions are further limited by the use of self-report instruments which are perceptual as opposed to direct measures. The generalizability of a study composed of these limitations must be constrained by the degree to which acceptance can be made of the assumptions underlying both the theoretical framework and the statistical procedures employed. However, this researcher feels that enough evidence has been obtained from the sample of schools to warrant the following implications for practice and further research.

Implications for Practice and Further Research

This section is composed of the implications which the study's findings have for the operation of the multiunit elementary school's I & R unit and for further research on its operations.

Implications for Practice

The multiunit organizational plan requires teachers to work in small groups called I & R units which are designed to encourage interpersonal interaction and face-to-face discussion among teachers. Moving from the age-graded, self-contained classroom organization to the multiunit organizational pattern where teachers work together in teams represents a significant change for the teacher. Those who have been involved in implementing the multiunit organization have continually asked, "What factors should be considered in staffing an I & R unit in order for it

to perform effectively?" The results of this study indicated that I & R unit effectiveness is associated with the unit leader's Instrumental Leadership behavior, Supportive Leadership behavior, and Participative Leadership behavior, the compatibility of the I & R unit members, the level of task structure, and the participation of I & R unit members in staff development activities; however, only Instrumental Leadership behavior, Supportive Leadership behavior, Participative Leadership behavior, and workshop participation were identified as significant influences on I & R unit effectiveness.

One implication of this major finding is that those who are concerned with staffing an I & R unit should consider the selection of a unit leader who has exhibited the behaviors of clarifying expectations, assigning specific tasks, specifying procedures to be followed, considering the needs of subordinates, being friendly and approachable, allowing subordinates to influence his/her decisions, and including subordinates in decision making in other supervisory capacities or a person who is predisposed to behave primarily in this manner. The findings also indicated that certain unit leader behaviors were more strongly related to certain categories of I & R unit effectiveness which implies that in selecting a unit leader, consideration should also be given to the adaptability of the candidate in exhibiting the appropriate leadership behavior given the task of achieving a specified category of the performance objectives.

A second implication of this major finding is that in staffing an I & R unit consideration should be given to how well the teachers will "get along" with one another. Quite often it is not possible for implementers to staff I & R units with compatible members. An alternative

to screening candidates on the basis of compatibility is to design and provide an ongoing staff development program in order to sensitize I & R unit members to one another's interpersonal needs.

The finding that I & R unit effectiveness is significantly related to the percentage of I & R unit members who participated in staff development activities for school staff as described in the IGE/MUS-E guidelines which call for the school's principal and unit leaders to conduct a staff development workshop for training teachers in IGE concepts holds implications.[4] Those in decision making positions in school districts implementing IGE should be made aware of the significant relationship between I & R unit effectiveness and these staff development activities, and they should make a commitment to providing the necessary resources for these activities to occur.

It is interesting to note that no significant relationship was found to exist between any of the following: I & R unit instructional program (I & II) effectiveness; I & R unit instructional program (I) effectiveness; I & R unit instructional program (II) effectiveness. This is an alarming finding since the main function of an I & R unit is to plan, carry out, and evaluate, as a team, the instructional programs for the students assigned to the unit. This finding holds an implication for the designers of IGE staff development activities. Activities designed for the instruction of the Instructional Programing Model should be improved. This implication is also supported in the findings reported in Ironside's study of the nationwide installation of IGE.[5]

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[4]Klausmeier, et al., op. cit., pp. 69-87.

[5]Ironside, loc. cit.

Implications for Further Research

Several questions for further research have been raised by this study. Researchers may find the following questions of interest:

1. Would a case study of the same phenomena reveal similar relationships to those found in this study?
2. Would the results of this study be similar to those found using different multiple regression selection procedures?
3. Would the results of this study be similar across a different sample of IGE schools?
4. Could the findings in the regression models be determined as causing I & R unit effectiveness or resulting from it?
5. Is there an optimal number of I & R unit members associated with I & R unit effectiveness?
6. Is there a minimal number of hours in meetings associated with I & R unit effectiveness?
7. Are there other intra-group variables not examined in the study that are related to I & R unit effectiveness?
8. Is I & R unit effectiveness related to any extra-group variables?
9. Is I & R unit effectiveness influenced by I & R unit member decision involvement?
10. Is I & R unit effectiveness related to student achievement?
11. Why did I & R unit member compatibility not significantly influence I & R unit effectiveness?

In conclusion, it is the investigator's sincere hope that this study will provide insight into the operations of the multiunit elementary school's I & R unit and that it will stimulate other researchers to study those questions raised by this investigation.

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APPENDICES

APPENDIX A

SEVEN COMPONENTS OF INDIVIDUALLY GUIDED EDUCATION (IGE)

1. A well-defined organization for instruction and a related administrative organization at the building and central office levels (the Multiunit Elementary School)
2. A system of instructional programming
3. Appropriate curriculum materials and instructional procedures
4. A design for measurement and evaluation
5. A home-school communication program
6. Facilitative environments
7. Research and development

Definition of IGE: IGE is defined as a system for formulating and carrying out instructional programs for individual students in which planned variations are made in:

1. what each student learns,
2. how rapidly he learns, and
3. how he goes about learning.

APPENDIX B

I AND R UNIT OPERATIONS SURVEY

EXPERIMENTAL COPY

You are participating in a study sponsored by the Wisconsin Research and Development Center for Cognitive Learning and the University of Wisconsin-Madison Department of Educational Administration. Its purpose is to determine the variables which are important in contributing to the operations of an I and R unit. As you consider each of the questions in the following survey, think and respond from the viewpoint of your present position. All responses will remain confidential and none will be identified by person.

When you have completed the survey, seal it in the enclosed envelope and return it to the teacher designated to return the surveys to the Center.

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PREFACE

BACKGROUND DATA

A. Your Position? A. _____

1. Principal
2. Unit Leader
3. Unit Teacher

B. Name of your Unit? B. _____

C. Number of teachers in your unit including the unit leader? C. _____

D. Sex D. _____

1. Male
2. Female

E. Number of years in present school? E. _____

F. Number of years in your present position? F. _____

G. Number of years in your present unit? G. _____

H. Total years of teaching experience? H. _____

I. Total years of administrative or supervisory experience? I. _____

J. Highest level of professional preparation? J. _____

1. Less than Bachelors Degree
2. Bachelors Degree
3. Bachelors + 16 credits
4. Masters Degree
5. Masters + 16 credits
6. Masters + 32 credits
7. Doctors Degree

GO ON TO THE NEXT PAGE . . .

K. Have you participated in a 3-Day Principal-Unit Leader Workshop? K. _____

1. Yes
2. No

L. Have you participated in a school staff development workshop in which you were trained to implement IGE/MUS-E? L. _____

1. Yes
2. No

M. What is the average number of times your unit meets in a week? M. _____

N. What is the average amount of time your unit spends in meetings each week (in hours)? N. _____

GO ON TO THE NEXT PAGE . . .

SECTION I

FIRO-B

DIRECTIONS: For each statement, decide which of the following answers best applies to you. Place the number of the answer on the line at the left of the statement. Please be as honest as you can.

1. usually 2. often 3. sometimes 4. occasionally

5. rarely 6. never

____ 1. I try to be with people.

____ 2. I let other people decide what to do.

____ 3. I join social groups.

____ 4. I try to have close relationships when I have an opportunity.

____ 5. I tend to join social organizations when I have an opportunity.

____ 6. I let other people strongly influence my actions.

____ 7. I try to be included in informal social activities.

____ 8. I try to have close, personal relationships with people.

____ 9. I try to include other people in my plans.

____ 10. I let other people control my actions.

____ 11. I try to have people around me.

____ 12. I try to get close and personal with people.

____ 13. When people are doing things together, I tend to join them.

____ 14. I am easily led by people.

____ 15. I try to avoid being alone.

____ 16. I try to participate in group activities.

GO ON TO THE NEXT PAGE . . .

For each of the next group of statements, choose one of the following answers:

1. most people 2. many people 3. some people 4. a few people 5. one or two people 6. nobody

____ 17. I try to be friendly to people.

____ 18. I let other people decide what to do.

____ 19. My personal relations with people are cool and distant.

____ 20. I let other people take charge of things.

____ 21. I try to have close relationships with people.

____ 22. I let other people strongly influence my actions.

____ 23. I try to get close and personal with people.

____ 24. I let other people control my actions.

____ 25. I act cool and distant with people.

____ 26. I am easily led by people.

____ 27. I try to have close, personal relationships with people.

____ 28. I like people to invite me to things.

____ 29. I like people to act close and personal with me.

____ 30. I try to influence strongly other people's actions.

____ 31. I like people to invite me to join in their activities.

____ 32. I like people to act close toward me.

____ 33. I try to take charge of things when I am with people.

____ 34. I like people to include me in their activities.

____ 35. I like people to act cool and distant toward me.

GO ON TO THE NEXT PAGE . . .

1. most people 2. many people 3. some people 4. a few people

5. one or two people 6. nobody

____ 36. I try to have other people do things the way I want them done.

____ 37. I like people to ask me to participate in their discussions.

____ 38. I like people to act friendly toward me.

____ 39. I like people to invite me to participate in their activities.

____ 40. I like people to act distant toward me.

For each of the next group of statements choose one of the following answers:

1. usually 2. often 3. sometimes 4. occasionally

5. rarely 6. never

____ 41. I try to be the dominant person when I am with people.

____ 42. I like people to invite me to things.

____ 43. I like people to act close toward me.

____ 44. I try to have other people do things I want done.

____ 45. I like people to invite me to join their activities.

____ 46. I like people to act cool and distant toward me.

____ 47. I try to influence strongly other people's actions.

____ 48. I like people to include me in their activities.

____ 49. I like people to act close and personal with me.

____ 50. I try to take charge of things when I am with people.

____ 51. I like people to invite me to participate in their activities.

GO ON TO THE NEXT PAGE . . .

1. usually 2. often 3. sometimes 4. occasionally

5. rarely 6. never

____ 52. I like people to act distant toward me.

____ 53. I try to have other people do things the way I want them done.

____ 54. I take charge of things when I am with people.

GO ON TO THE NEXT PAGE . . .

SECTION II

I AND R UNIT OPERATIONS QUESTIONNAIRE

DIRECTIONS: The following items are based upon the performance objectives identified by the Wisconsin R and D Center as being the responsibility of the I and R unit. Please indicate how effectively your unit achieves these objectives by circling the response which most accurately describes, in your opinion, the operations of your unit.

VE = Very effectively
E = Effectively
SE = Somewhat effectively
I = Ineffectively
VI = Very ineffectively

A. Instructional Program

Our I and R unit, in the curricular area(s) to which we are applying the Instructional Programing Model:

VE E SE I VI 1. Develops and/or selects outlines of skills and concepts to be learned which are appropriate to the student in the unit.

VE E SE I VI 2. Develops and/or selects behavioral objectives related to the skill and concept outlines.

VE E SE I VI 3. Specifies materials, equipment, personnel, space and time needed for instruction.

VE E SE I VI 4. Uses a variety of materials for each of the identified instructional objectives.

VE E SE I VI 5. Specifies teacher activities needed for instruction.

VE E SE I VI 6. Preassesses students for attainment of the objectives within the first month of implementing the Instructional Programing Model.

GO ON TO THE NEXT PAGE . . .

VE = Very effectively
E = Effectively
SE = Somewhat effectively
I = Ineffectively
VI = Very ineffectively

VE E SE I VI 7. Preassesses students' motivational level, learning style, interest and attitudes, and special problems as soon after the preassessment of objectives attainment as the unit staff can conduct the assessment and utilize the results.

VE E SE I VI 8. Places students in initial groups in IGE curriculum areas based on preassessment results regarding achievement, learning style, motivational level, interest, or other relevant variable(s).

VE E SE I VI 9. Uses a variety of student grouping patterns in the course of a particular curriculum such as (a) independent study, (b) one-to-one (teacher-student), (c) one-to-one (student-student), (d) small group (3-11 students), (e) medium group (12-19 students), (f) class-sized group (20-39 students), and (g) large group (more than 30 students).

VE E SE I VI 10. Assesses students for attainment of objectives after instruction.

VE E SE I VI 11. Records assessment results in a usable form (e.g., on charts, McBee cards, lists, or individual folders).

VE E SE I VI 12. Conducts evaluation regarding the percentage of students who attain specific objectives.

VE E SE I VI 13. Regroups students at least every two to three weeks based on needs and attainment of objectives.

VE E SE I VI 14. Plans for all I and R unit teachers to teach in the IGE subject-matter areas.

VE E SE I VI 15. Conducts evaluation regarding the effectiveness of the instructional materials currently in use.

VE E SE I VI 16. Conducts evaluation regarding the effectiveness of the instructional techniques currently in use.

GO ON TO THE NEXT PAGE . . .

VE = Very effectively
E = Effectively
SE = Somewhat effectively
I = Ineffectively
VI = Very ineffectively

VE E SE I VI 17. Conducts evaluation regarding the effectiveness of the assessment materials currently in use.

VE E SE I VI 18. Conducts evaluation regarding the effectiveness of the assessment techniques currently in use.

B. Staff Development

Our I and R unit:

VE E SE I VI 19. Participates in the school's staff development program as planned by the IIC.

VE E SE I VI 20. Participates in the evaluation of the school's staff development plan.

VE E SE I VI 21. Participates in the evaluation of the intern-student-teacher program.

22. Meets together for at least three days prior to the opening of school:

VE E SE I VI a. to make immediate plans regarding student grouping patterns and scheduling for the first one to two weeks of school.

b. to make long-range plans regarding our I and R unit's instructional design and goals for the entire year.

VE E SE I VI 23. Meets at least one day per semester when children are not at school to extend IGE planning into other curricular areas.

C. Organizational Operations

Our I and R unit:

GO ON TO THE NEXT PAGE . . .

VE = Very effectively
E = Effectively
SE = Somewhat effectively
I = Ineffectively
VI = Very ineffectively

VE E SE I VI	24.	Schedules unit meetings regularly.
VE E SE I VI	25.	Schedules at least two hours per week with one hour in a single block to plan for instruction.
VE E SE I VI	26.	Holds unit meetings during the regular staff working day.
VE E SE I VI	27.	Requires the unit leader, unit teachers, interns, and student teachers assigned to the unit to attend unit meetings.
VE E SE I VI	28.	Prepares and distributes an agenda to all personnel involved in the meeting prior to unit meeting time.
VE E SE I VI	29.	Has its unit meetings chaired by the unit leader.
VE E SE I VI	30.	Focuses discussion on agenda topics at unit meetings.
VE E SE I VI	31.	Has consultants, teachers, IMC director (librarian), aides, and others attend unit meetings at our request.
VE E SE I VI	32.	Keeps minutes of unit meetings.
VE E SE I VI	33.	Distributes minutes of unit meetings to total unit staff, the IIC, and others who attend unit meetings.
VE E SE I VI	34.	Holds goal-setting meetings at least once per semester.
VE E SE I VI	35.	Holds curriculum design meetings at least once per semester.
VE E SE I VI	36.	Holds meetings to evaluate instructional units, programs, and unit operations at least once per quarter.
VE E SE I VI	37.	Holds grouping and scheduling meetings at least once every two weeks.

GO ON TO THE NEXT PAGE . . .

VE = Very effectively
E = Effectively
SE = Somewhat effectively
I = Ineffectively
VI = Very ineffectively

VE E SE I VI 38. Holds meetings whenever necessary to deal with immediate problems.

VE E SE I VI 39. Evaluates the flexibility of the schedule at least once per quarter.

VE E SE I VI 40. Assesses each unit member's expertise in subject matter at least once per year.

VE E SE I VI 41. Assesses each unit member's expertise in instructing various sizes and kinds of groups at least once per year.

VE E SE I VI 42. Provides at least five hours per week released time from instruction for the unit leader to plan, manage, study and conduct research.

VE E SE I VI 43. Provides at least one hour per week released time from instruction for teachers to plan, study, and conduct research.

VE E SE I VI 44. Assigns aides (instructional and clerical) tasks according to broad guidelines established by the unit.

VE E SE I VI 45. Assigns each teacher a specialization in a curriculum area, or teaching styles to develop, so that he can act as a resource person to the unit.

VE E SE I VI 46. Identifies each student in the unit with a teacher who monitors his progress during the year and takes initiative as required in the IGE subject-matter areas.

D. School-Community Relations

Our I & R unit:

GO ON TO THE NEXT PAGE . . .

VE = Very effectively
E = Effectively
SE = Somewhat effectively
I = Ineffectively
VI = Very ineffectively

VE E SE I VI 47. Identifies each student with a staff member for purposes of home-school relations, including conferences and home visits, as well as day-to-day guidance of the student and monitoring of his performance.

VE E SE I VI 48. Reports individual students' progress to parents.

VE E SE I VI 49. Cooperates with the IIC in interpreting the IGE/MUS-E concept to parents and residents in the school attendance area.

VE E SE I VI 50. Cooperates with the IIC in utilizing volunteer community personnel (e.g., parents, other adults, high school and college students, and people with special expertise) in the instructional program and other school activities.

GO ON TO THE NEXT PAGE . . .

SECTION III

TASK STRUCTURE

DIRECTIONS: This section contains ten task structure items. Please indicate your response to each of the questions by placing a check (✓) beside the most appropriate answer.

1. Problems which arise on my job can generally be solved by using standard procedures.

   1 _____ Definitely not true of my job
   2 _____ Not true of my job
   3 _____ Somewhat true of my job
   4 _____ True of my job
   5 _____ Extremely true of my job

2. I can generally perform my job by using standardized methods.

   1 _____ Definitely not true of my job
   2 _____ Not true of my job
   3 _____ Somewhat true of my job
   4 _____ True of my job
   5 _____ Extremely true of my job

3. Problems which I encounter in my job can generally be solved in the same way.

   1 _____ Definitely not true of my job
   2 _____ Not true of my job
   3 _____ Somewhat true of my job
   4 _____ True of my job
   5 _____ Extremely true of my job

4. What is the average time it takes for you to complete a typical assignment?

   1 _____ Longer than 2 weeks
   2 _____ Between 1 and 2 weeks
   3 _____ Between 3 days and 1 week
   4 _____ Between 1 and 3 days
   5 _____ One day or less

GO ON TO THE NEXT PAGE . . .

5. How repetitious are your duties?

1 _____ Very little
2 _____ Some
3 _____ Quite a bit
4 _____ Very much
5 _____ Almost completely

6. How similar are the tasks you perform in a typical workday?

1 _____ Almost all different
2 _____ Very few the same
3 _____ Only a few the same
4 _____ Quite a few the same
5 _____ Almost all the same

7. If you were to write a list of the exact activities you would be confronted by on an average workday, what percent of these activities do you think would be interrupted by unexpected events?

1 _____ 80 - 100%
2 _____ 60 - 80%
3 _____ 40 - 60%
4 _____ 20 - 40%
5 _____ 0 - 20%

8. How much variety is there in the tasks which you perform?

1 _____ Very much
2 _____ Quite a bit
3 _____ Some
4 _____ Little
5 _____ Very little

9. Every job is confronted by certain routine and repetitive demands. What percent of the activities or work demands connected with your job would you consider to be of a routine nature?

1 _____ 0 - 20%
2 _____ 20 - 40%
3 _____ 40 - 60%
4 _____ 60 - 80%
5 _____ 80 - 100%

GO ON TO THE NEXT PAGE . . .

10. The tasks of some individuals are more "structured" than others: the goals are clearer, the methods to be used are more understood, and the problems are more repetitive and less unique, for example. Would you please rate what you feel is the degree of "structure" of your job by checking the best response.

1 _____ My job is highly unstructured
2 _____ My job is unstructured
3 _____ My job is somewhat structured
4 _____ My job is structured
5 _____ My job is highly structured

GO ON TO THE NEXT PAGE . . .

SECTION IV

UNIT LEADER BEHAVIOR DESCRIPTION

Please indicate in this section how you believe your unit leader actually behaves as a leader in your unit. Each item describes a specific kind of leader behavior. Mark the frequency with which you believe your unit leader to engage in each kind of behavior.

DIRECTIONS: 1. READ each item carefully.

2. THINK how frequently your unit leader actually engages in the behavior described by the item. How often does your unit leader act in the manner described?

3. INDICATE your answer for each statement on the questionnaire according to the following illustration.

5 My unit leader always acts this way

4 My unit leader often acts this way

3 My unit leader occasionally acts this way

2 My unit leader seldom acts this way

1 My unit leader never acts this way

_____ 1. My unit leader is friendly and approachable.

_____ 2. My unit leader consults with unit members before taking action.

_____ 3. My unit leader keeps to himself/herself.

_____ 4. My unit leader does little things to make it pleasant to be a member of the unit.

GO ON TO THE NEXT PAGE . . .

5 My unit leader <u>always</u> acts this way

4 My unit leader <u>often</u> acts this way

3 My unit leader <u>occasionally</u> acts this way

2 My unit leader <u>seldom</u> acts this way

1 My unit leader <u>never</u> acts this way

_____ 5. My unit leader helps me overcome problems which stop me from carrying out my task.

_____ 6. My unit leader puts suggestions made by the unit into operation.

_____ 7. My unit leader asks that unit members follow standard rules and regulations.

_____ 8. My unit leader decides what shall be done and how it shall be done.

_____ 9. My unit leader gives serious consideration to what unit members have to say before making decisions.

_____ 10. My unit leader maintains definite standards of performance.

_____ 11. My unit leader is willing to make changes.

_____ 12. My unit leader asks unit members for their suggestions concerning how to carry out assignments.

_____ 13. My unit leader makes sure that his/her part in the unit is understood.

_____ 14. My unit leader helps me make working on my tasks more pleasant.

_____ 15. My unit leader looks out for the personal welfare of unit members.

_____ 16. My unit leader consults with unit members when faced with a problem.

GO ON TO THE NEXT PAGE . . .

5 My unit leader always acts this way

4 My unit leader often acts this way

3 My unit leader occasionally acts this way

2 My unit leader seldom acts this way

1 My unit leader never acts this way

_____ 17. My unit leader lets unit members know what is expected of them.

_____ 18. My unit leader treats all unit members as his/her equals.

_____ 19. My unit leader schedules the work to be done.

_____ 20. My unit leader explains the way my tasks should be carried out.

_____ 21. My unit leader gives advance notice of changes.

_____ 22. My unit leader asks unit members for suggestions on what assignments should be made.

APPENDIX C

CONSULTING PSYCHOLOGISTS PRESS INC.
577 COLLEGE AVENUE
PALO ALTO, CALIFORNIA 94306

Nancy A. Evers
The Wisconsin Research and Development Center
for Cognitive Learning
The University of Wisconsin
1025 West Johnson St.
Madison, Wisconsin 53706

In response to your request of September 19, 1973 permission is hereby granted you to reproduce the FIRO-B in a size to conform to that of other instruments to be used in doctoral dissertation research, as outlined in your letter of September 19, 1973.

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CONSULTING PSYCHOLOGISTS PRESS INC.

By _____ President

Date September 24, 1973

APPENDIX D

INTRODUCTION

Hello (Principal's Name):

This is (Your Name) calling for the research component of the Wisconsin Research and Development Center in Madison. We're calling all multiunit schools listed in the 1972-73 Multiunit Directory to obtain some brief descriptive information not presently available to us. The information we seek concerns your beginning date, the number of units in your school this year, and some other items. Can you take a few minutes now to answer these questions?

SCHEDULE

1. When did your school implement IGE/MUS-E?

2. Is your entire school organized into units?

3a. How many units do you have in your school this year?

3b. How many teachers, including the unit leader, are in each unit?

3c. How many student teachers (interns) are in each unit?

3d. How many aides are in each unit?

3e. What is the equivalent grade span for each unit? For example, in a graded school, what would unit ____ be?

4a. Do you have an Instructional Improvement Committee (IIC)?

Yes (Ask Q4b and Q4c) No (Skip to Q5a)

4b. How frequently does the IIC meet?

4c. What is the average length of these meetings?

5a. How many schools in your district are IGE/MUS-Es?

Two or more (Ask Q5b) One (Skip to Q6a)

5b. Do you have a Systemwide Policy Committee (SPC)?

Yes (Ask Q5c and Q5d) No (Skip to Q5e)

5c. Who serves on the SPC?

5d. When did you implement the SPC?

5e. In your district, who performs the functions of the SPC?

6a. Is the Instructional Programing Model (IPM) being applied to at least one curricular area? (If respondent does not know what the IPM is, clarify by stating: The Instructional Programing Model is the process of identifying objectives, preassessing student mastery of objectives, providing instruction based upon the results of preassessment, and conducting post assessment to determine student mastery of objectives.)

6b. Which of the Center's curriculum products are you using?

7. Did your school plan and carry out a staff development program to train other school staff members in the concepts of IGE/MUS-E?

8a. Did anyone from your school attend a three-day Principal-Unit Leader Workshop before implementing the program in your school?

Yes (Ask Q8b) No (Skip to Q9)

8b. Who attended that workshop?

9a. Does your school maintain a record of student achievement test scores and other student data, such as socioeconomic status, by student?

Yes (Ask Q9b) No (Skip to Q10)

9b. Is it automated at the district level?

10. Does your school use a program cost accounting system--that is, cost accounting by program, not by line item?

11. Are you a teaching principal?

12. One of the questions most frequently asked by school personnel when implementing IGE and organizing a multiunit school is: "What factors are related to unit effectiveness?" An answer to this question could indicate what factors to consider in forming effective units. Two research studies being conducted by the R and D Center deal with this question. One study looks at the compatibility of unit teachers, the behavior of unit leaders, and a few other small group factors in relationship to unit effectiveness. The second study examines the leader behavior of the principal and the organizational structure at the IGE/MUS-E in relationship to unit effectiveness. If your school were selected at random from the Center's Multiunit Directory, would you be willing to participate in these studies?

Yes (Read this statement: If your school is selected, you will hear from us by the end of October.)

CLOSE: Thank you very much for taking the time to help us. We greatly appreciate having this information.

DIRECTIONS FOR RECORDING RESPONSES

1. Implementation date: record month and year

2. Fully unitized: record a 1 if yes; a 2 if no

3a. Number of units: record number

3b. Number of teachers/unit: record number/unit beside numbers representing each of the units

3c. Number of student teachers/unit: record number beside numbers representing each of the units

3d. Number of aides/unit: record number/unit beside numbers representing each of the units

3e. Grade span/unit: record span/unit beside numbers representing each of the units

4a. IIC: record a 1 if yes; a 2 if no

4b. Frequency of IIC meetings: record frequency

4c. Average length of IIC meetings: record average length

5a. Number of IGE/MUS-Es in district: record number

5b. SPC: record a 1 if yes; a 2 if no

5c. Personnel on SPC: circle appropriate positions in column; specify position(s) if circle "other"

5d. Date SPC implemented: record month and year

5e. Who performs SPC functions: circle appropriate positions in column; specify position(s) if circle "other"

6a. Applying IPM: record a 1 if yes; a 2 if no

6b. R & D Center products: circle appropriate product in column

7. Staff development: record a 1 if yes; a 2 if no

8a. Principal-unit leader workshop: record a 1 if yes; a 2 if no

8b. Who attended principal-unit leader workshop: circle appropriate positions in column; specify position(s) if circle "other"

9a. Computerized student records: record a 1 if yes; a 2 if no; a 3 if doesn't know

9b. Automated student records: record a 1 if yes; a 2 if no; a 3 if doesn't know

10. Program cost accounting system: record a 1 if yes; a 2 if no; a 3 if doesn't know

11. Teaching principal: record a 1 if yes; a 2 if no

12. Participate in study: record a 1 if yes; a 2 if no; a 3 if doesn't know

KEY:

S = Superintendent
CC = Curriculum Coordinator
P = Principal
UL = Unit Leader
UT = Unit Teacher
O = Other

WDRSD-WA = Word Attack Skills
WDRSD-SS = Study Skills
WDRSD-C = Comprehension
PR = Pre Reading
DMP = Developing Math. Processes
IGM = Individually Guided Motivation
ES = Environmental Science

Implementation Date	Fully Unitized	Number of Units	Number Teachers/Unit	Number Stu. Tchrs./Unit	Number Aides/Unit	Grade Span/Unit	IIC	Frequency of IIC Meetings	Length of IIC Meetings	No. IGE/MUS-Es in District	SPC	Personnel on SPC	Date SPC Implemented	Who Performs SPC Functions	Applying IPM	R & D Center Products	Staff Development	P-UL Workshop	Who Attended P-UL Workshop	Computerized Stu. Records	Automated Stu. Records	Prog. Cost Acctg. System	Teaching Principal	Participate in Study
			1-	1-	1-	1-						S		S		WDRSD-WA			S					
			2-	2-	2-	2-						CC		CC		WDRSD-SS			CC					
			3-	3-	3-	3-						P		P		WDRSD-C			P					
			4-	4-	4-	4-						UL		UL		PR			UL					
			5-	5-	5-	5-						UT		UT		DMP			UT					
			6-	6-	6-	6-						O		O		IGM			O					
			7-	7-	7-	7-										ES								
			1-	1-	1-	1-						S		S		WDRSD-WA			S					
			2-	2-	2-	2-						CC		CC		WDRSD-SS			CC					
			3-	3-	3-	3-						P		P		WDRSD-C			P					
			4-	4-	4-	4-						UL		UL		PR			UL					
			5-	5-	5-	5-						UT		UT		DMP			UT					
			6-	6-	6-	6-						O		O		IGM			O					
			7-	7-	7-	7										ES								
			1-	1-	1-	1-						S		S		WDRSD-WA			S					
			2-	2-	2-	2-						CC		CC		WDRSD-SS			CC					
			3-	3-	3-	3-						P		P		WDRSD-C			P					
			4-	4-	4-	4-						UL		UL		PR			UL					
			5-	5-	5-	5-						UT		UT		DMP			UT					
			6-	6-	6-	6-						O		O		IGM			O					
			7-	7-	7-	7-										ES								
			1-	1-	1-	1-						S		S		WDRSD-WA			S					
			2-	2-	2-	2-						CC		CC		WDRSD-SS			CC					
			3-	3-	3-	3-						P		P		WDRSD-C			P					
			4-	4-	4-	4-						UL		UL		PR			UL					
			5-	5-	5-	5-						UT		UT		DMP			UT					
			6-	6-	6-	6-						O		O		IGM			O					
			7-	7-	7-	7-										ES								

APPENDIX E

the
Wisconsin
Research and Development Center
for Cognitive
Learning

the University of Wisconsin · 1025 West Johnson Street · Madison, Wisconsin 53706 · (608)262-4901

October 24, 1974

Dear

A question reflecting a very practical concern and one which you may have been asked in implementing the multiunit organization is: What factors should be considered in staffing an I & R unit in order for it to perform effectively? I am conducting a research study regarding I & R unit effectiveness in partial fulfillment of the requirements for a doctorate degree. This study is being conducted through the Wisconsin R and D Center.

The purpose of my study is to determine the interrelationships of the I & R unit effectiveness to (1) I & R unit member compatibility, (2) unit leader leader behavior, and (3) the level of task structure as perceived by I & R unit members. The results of this study will provide information to practicing IGE/MUS-E administrators regarding what factors to consider in staffing I & R units, provide a research base for further empirical studies related to small group effectiveness, and provide information which could be applied to the development of a comprehensive small group effectiveness theory.

The design of the study involves the use of a questionnaire to determine perceptions of I & R unit effectiveness, unit leader leader behavior, interpersonal relations orientation behavior, task structure, and background data.

A stratified random sample of fifty schools has been drawn from the population of schools listed in the 1972-1973 IGE/Multiunit Elementary School Directory. Of those fifty schools, _____ are in _____. The _____ _____ schools are:

I will be calling these schools to ask them to participate.

Realizing the importance of communication networks and the importance of your position in the _____ IGE/MUS-E communication network, I am sending you this information. If you should have any further

questions regarding my study, please feel free to contact me here at the Wisconsin R and D Center.

Sincerely,

Nancy A. Evers
Research Assistant

NAE/sjf

APPENDIX F

the
Wisconsin
Research and Development Center
for Cognitive
Learning

the University of Wisconsin · 1025 West Johnson Street · Madison, Wisconsin 53706 · (608)262 - 4901

November 2, 1973

I sincerely appreciate your willingness to cooperate in this study. The following directions are for distribution, collection, and return of the enclosed questionnaires.

1. Hold a meeting of all unit leaders and teachers in your school. During this meeting the unit leaders and teachers should respond to the enclosed questionnaires. Considering the time needed for the distribution of materials, the reading of directions, and the completion of the instrument, the meeting should be approximately sixty minutes in length.

2. Distribute "Unit Leader" envelopes containing white and blue forms to the unit leaders.

3. Distribute "Teacher" envelopes containing white and pink forms to the teachers.

4. All questionnaires should be completed independently by the respondents during this meeting. When the respondents have completed their instruments, each one is to put his/her questionnaire back into its envelope, seal it, and hand it in to the teacher designee who will be responsible for collecting all questionnaires.

Prior to the meeting, a teacher should be designated as the one to whom questionnaires will be returned. That teacher will be responsible for (1) making sure all sealed "Unit Leader" and "Teacher" envelopes are placed in the return mailing bag, (2) sealing the return mailing bag of completed questionnaires, and (3) returning it to the R & D Center C.O.D. Please give the enclosed message regarding the return mailing directions to the teacher designee.

Please mail the completed questionnaires by Monday, November 12, 1973 in order that I may receive them by Thursday, November 15, 1973.

A question frequently asked by IGE/MUS-E implementers is what factors should be considered in staffing an I & R unit in order for it to be effective. I am conducting a research study in partial fulfillment of the research requirements for a doctorat• degree. The purpose of the study is to identify the variables which correlate with I & R Unit effectiveness. The results of the study will be important to those who are implementing the multiunit school's organizational pattern and to small group effectiveness research.

The design of the study involves the use of a questionnaire to determine perceptions of I & R unit effectiveness, compatability, unit leader behavior, and task structure. The attached copies of the questionnaires to which unit leaders and teachers will respond are for your information.

The results of the study will be reported in the form of a technical report, and you will receive a copy of the report when it becomes available from the R & D Center. Let me assure you that when we report the study's findings to a general audience, the identity of the schools and personnel will be withheld.

Please extend my gratitude to your staff for the time and cooperation they give in assisting the Center with this study; and for your interest and help, I am sincerely appreciative.

If you should have any questions related to the study, please feel free to call me collect at (608) 263-4272. I look forward to receiving your school's responses. Thank you again.

Sincerely,

Nancy Evers

NE:pr
Enclosures

TO: TEACHER DESIGNEE

RE: Return Mailing Directions

Your willingness to assist in the collection and return of the questionnaires is greatly appreciated. When the unit leaders and teachers have completed their responses, each one is to put his/her questionnaire back into the envelope, seal it, and hand it in to you, the teacher designee, who will be responsible for collecting and returning all questionnaires to the R & D Center.

Directions:

1. Make sure <u>all</u> sealed "Unit Leader" and "Teacher" envelopes are placed in the return mailing bag.

2. Seal the return mailing bag of completed questionnaires.

3. Mail the bag containing all of the questionnaires to the R & D Center no later than Monday, November 12, 1973, in order that we may receive it by Thursday, November 15, 1973.

Thank you very much for your assistance.

NA/pp

APPENDIX G

DESCRIPTIVE STATISTICS FOR THE NUMBER OF I & R UNIT MEMBERS, NUMBER OF HOURS AN I & R UNIT MEETS PER WEEK, AND PERCENTAGE OF THE I & R UNIT MEMBERS WHO PARTICIPATED IN STAFF DEVELOPMENT ACTIVITIES FOR SCHOOL STAFF

Variable	Mean	S.D.	Skew	Probability of Skew	Kurtosis	Probability of Kurtosis
Number of I & R Unit Members	4.4506	1.3377	2.6602	.0079	.2010	.8351
Number of Hours an I & R Unit Meets Per Week	3.0192	2.9193	28.9384	.0000	100.0596	.0000
Percentage of the I & R Unit Members Who Participated in Staff Development Activities for School Staff	1.2831	.2935	4.4893	.0001	-.3220	.7465